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KARAM'S SOURCE

MCQS FOR ANATOMY

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بسم الله الرحمن الرحيم

يُعدّ هذا الكتاب جمعا متواضعًا لِأسئلةٍ مُختارة من مصادرٍ مُختلفة على الشبكة، وقد تمّ ترتيبها وفقًا لتسلسل المحاضرات والمادة الدراسية.

وعلى الرغم من الحرص على دقة المحتوى، فإنّ كلّ عمل بشري مُعرّض للخطأ والنقص، لذا يُرجى التّسامح مع أيّ أخطاء قد تُصادفكم .

المصادر المعتمدة :

1- neuroanatomy
a. from cerebral hemispheres to midbrain depending on Bialy and love source
b. from midbrain to end depending on doctor Ghassan lectures

2. abdomen:
a. anterior abdominal wall part 1&2 and the peritoneum, posterior abdominal wall depending on Moore anatomy
b. liver and pancreas lectures based on Grays anatomy
c. the rest based on Dr. Ghassan lectures

3. pelvis and perineum
depending on bialy and love anatomy.

ولا تنسوني من صالح دعائكم
اخوكم كرم محمد

Karam

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lec 1: cerebral surfaces

1. Which landmark separates the frontal and parietal lobes from the temporal lobe on the lateral surface of the cerebral hemisphere?

a) Central sulcus

b) Sylvian fissure

c) Callosal sulcus

d) Parieto-occipital sulcus

2. The anterior and horizontal rami of the Sylvian fissure divide which gyrus into three parts?

a) Superior frontal gyrus

b) Inferior parietal gyrus

c) Inferior frontal gyrus

d) Superior temporal gyrus

3. Which sulcus separates the frontal lobe from the parietal lobe?

a) Central sulcus

b) Sylvian fissure

c) Calcarine sulcus

d) Cingulate sulcus

4. What is a key landmark on the medial surface of the cerebral hemisphere?

a) Calcarine sulcus

b) Sylvian fissure

c) Cingulate gyrus

d) Central sulcus

5. The cingulate gyrus lies above which structure?

a) Olfactory bulb

b) Corpus callosum

c) Central sulcus

d) Parieto-occipital sulcus

6. Which sulcus provides a clear boundary between the parietal and occipital lobes?

a) Central sulcus

b) Calcarine sulcus

c) Parieto-occipital sulcus

d) Rhinal sulcus

7. What is the name of the medial aspect of the parietal lobe?

a) Uncus

b) Precuneus

c) Fusiform gyrus

d) Pars opercularis

8. Which structure is bounded medially by the parieto-occipital sulcus and posteriorly by the calcarine sulcus?

a) Lingual gyrus

b) Cuneus

c) Uncus

d) Cingulate gyrus

9. The insula is a part of the cerebral cortex that becomes submerged during what?

a) Childbirth

b) Hemisphere enlargement

c) Adolescence

d) Neurological development

10. Which lobe contains the calcarine sulcus?

a) Frontal

b) Temporal

c) Parietal

d) Occipital

11. The fusiform gyrus is separated medially from which structure by the collateral sulcus?

a) Inferior temporal gyrus

b) Parahippocampal gyrus

c) Uncus

d) Gyrus rectus

12. Which sulcus bounds the uncus laterally?

a) Rhinal sulcus

b) Cingulate sulcus

c) Collateral sulcus

d) Parieto-occipital sulcus

13. The olfactory bulb and tract are located in which sulcus?

a) Orbital sulcus

b) Callosal sulcus

c) Olfactory sulcus

d) Collateral sulcus

14. What structure is bounded above by the cingulate sulcus and below by the callosal sulcus?

a) Precuneus

b) Central sulcus

c) Fusiform gyrus

d) Cingulate gyrus

15. The parahippocampal gyrus is continuous posteriorly with which structure?

a) Lingual gyrus

b) Uncus

c) Gyrus rectus

d) Inferior temporal gyrus

16. The central sulcus extends into what structure on the medial surface of the cerebral hemisphere?

a) Paracentral lobule

b) Cingulate gyrus

c) Precuneus

d) Calcarine sulcus

17. What is the name of the area that is the medial aspect of the occipital lobe?

a) Uncus

b) Fusiform gyrus

c) Cuneus

d) Pars triangularis

18. The olfactory sulcus separates which two gyri?

a) Pars opercularis and pars triangularis

b) Parahippocampal gyrus and lingual gyrus

c) Gyrus rectus and orbital gyri

d) Inferior temporal gyrus and fusiform gyrus

19. The inferior temporal gyrus is separated from the fusiform gyrus by which sulcus?

a) Occipitotemporal sulcus

b) Parieto-occipital sulcus

c) Calcarine sulcus

d) Rhinal sulcus

20. Which feature is NOT part of the inferior surface of the cerebral hemisphere?

a) Temporal lobe

b) Occipital lobe

c) Frontal lobe

d) Cingulate gyrus

Answers

1. b) Sylvian fissure
2. c) Inferior frontal gyrus
3. a) Central sulcus
4. b) Corpus callosum
5. b) Corpus callosum
6. c) Parieto-occipital sulcus
7. b) Precuneus
8. b) Cuneus
9. b) Hemisphere enlargement
10. d) Occipital
11. b) Parahippocampal gyrus
12. a) Rhinal sulcus
13. c) Olfactory sulcus
14. d) Cingulate gyrus
15. a) Lingual gyrus
16. a) Paracentral lobule
17. c) Cuneus
18. c) Gyrus rectus and orbital gyri
19. a) Occipitotemporal sulcus
20. d) Cingulate gyrus

lec 2 cerebral lobes

1. The frontal lobe is located anterior to the central sulcus and is involved in:
   a. motor function, eye movement, speech
   b. sensory processing
   c. visual processing
   d. language and understanding

2. The primary motor cortex is located in the:
   a. precentral gyrus
   b. postcentral gyrus
   c. superior frontal gyrus
   d. inferior frontal gyrus

3. Damage to the frontal eye field can cause:
   a. difficulty moving the limbs
   b. deviation of gaze towards the damaged side
   c. difficulty understanding language
   d. loss of taste

4. Broca's area, involved in speech production, is located in the:
   a. dominant inferior frontal gyrus
   b. dominant superior frontal gyrus
   c. non-dominant temporal lobe
   d. occipital lobe

5. The prefrontal cortex is responsible for:

a. primary motor function
b. auditory processing
c. higher cognitive functions
d. visual processing

6. The primary auditory cortex is located in the:

a. temporal lobe
b. parietal lobe
c. frontal lobe
d. occipital lobe

7. Wernicke's area, involved in language comprehension, is located in the:

a. frontal lobe
b. dominant posterior temporal gyrus
c. parietal lobe
d. occipital lobe

8. The primary somatosensory cortex is located in the:

a. postcentral gyrus
b. precentral gyrus
c. temporal lobe
d. occipital lobe

9. A lesion in the superior parietal lobule can result in:

a. visual field defects

b. contralateral sensory neglect

c. difficulty producing speech

d. difficulty controlling emotions

10. The primary visual cortex is located in the:

a. occipital lobe

b. temporal lobe

c. parietal lobe

d. frontal lobe

11. Which lobe is NOT directly involved in motor function?

a. Frontal lobe

b. Parietal lobe

c. Occipital lobe

d. Temporal lobe

12. Broca's area and Wernicke's area are located in different lobes. Which of the following is the TRUE pairing?

a. Broca's area - frontal lobe, Wernicke's area - temporal lobe

b. Broca's area - temporal lobe, Wernicke's area - frontal lobe

c. Broca's area - occipital lobe, Wernicke's area - parietal lobe

d. Broca's area - parietal lobe, Wernicke's area - occipital lobe

13. Damage to the insula can potentially affect which of the following?

a. Sense of taste

b. Regulation of body temperature

c. Visual perception

d. Hearing

14. The somatosensory cortex receives information about touch, pressure, and pain. Which of the following structures does NOT send information to this area?

a. Retina

b. Cochlea

c. Skin receptors

d. Muscle spindles

15. The prefrontal cortex is involved in several higher-order functions. Which of the following is NOT likely to be affected by damage to this area?

a. Planning and decision-making

b. Processing visual information

c. Emotional regulation

d. Memory formation

16. Lesions in the occipital lobe can cause a variety of visual problems. Which of the following is the LEAST likely consequence of damage to this area?

a. Difficulty recognizing objects

b. Blindness in one half of the visual field

c. Loss of hearing

d. Impaired depth perception

17. The auditory cortex is responsible for processing sound information. Which part of the brain is responsible for initiating the sequence of muscle movements required to speak?

a. Wernicke's area

b. Broca's area

c. Primary motor cortex

d. Prefrontal cortex

18. Hemispheric lateralization refers to the specialization of function between the left and right hemispheres. Which hemisphere is typically dominant for language processing in most people?

a. Left hemisphere

b. Right hemisphere

c. Dominance varies between individuals

d. There is no hemispheric dominance for language

19. The brain is a complex organ with interconnected regions. Which of the following is the MOST accurate statement about functional localization?

a. Specific functions are confined to entirely isolated brain regions.

b. Different brain areas work completely independently of each other.

c. Many functions involve the coordinated activity of multiple brain regions.

d. The structure of the brain does not influence its function.

Answers

1. a) motor function, eye movement, speech

2. a) precentral gyrus

3. b) deviation of gaze towards the damaged side

4. a) dominant inferior frontal gyrus

5. c) higher cognitive functions

6. a) temporal lobe

7. b) dominant posterior temporal gyrus

8. a) postcentral gyrus

9. b) contralateral sensory neglect

10. a) occipital lobe

11. c) Occipital lobe

12. a) Broca's area - frontal lobe, Wernicke's area - temporal lobe

13. a) Sense of taste

14. a) Retina

15. b) Processing visual information

16. c) Loss of hearing

17. c) Primary motor cortex

18. a) Left hemisphere

19. c) Many functions involve the coordinated activity of multiple brain regions.

Lec 3: White Matter

1. Categorization of white matter fibers is based on:

a. Thickness

b. Color

c. Origin and destination

d. Myelin content

2. Short association fibers connect:

a. Widely separated gyri

b. Adjacent gyri in the same hemisphere

c. Different lobes within a hemisphere

d. Hemispheres across the midline

3. The cingulum connects the cingulate gyrus to the:

a. Parahippocampal gyrus

b. Uncinate fasciculus

c. Inferior fronto-occipital fasciculus

d. Arcuate fasciculus

4. The inferior longitudinal fasciculus connects the:

a. Frontal and temporal lobes

b. Frontal and parietal lobes

c. Occipital and temporal lobes

d. Parietal and occipital lobes

5. Projection fibers terminate in the:

a. Cerebral cortex

b. Brainstem and spinal cord

c. Thalamus and hypothalamus

d. Limbic system

6. The corona radiata contains:

a. Only ascending fibers

b. Only descending fibers

c. Both ascending and descending fibers

d. Commissural fibers

7. The internal capsule is located between the:

a. Lentiform nucleus and thalamus

b. Thalamus and caudate nucleus

c. Frontal and temporal lobes

d. Parietal and occipital lobes

8. The genu of the internal capsule contains fibers projecting to:

a. Cranial nerve nuclei

b. Somatosensory cortex

c. Visual cortex

d. Auditory cortex

9. Corticospinal fibers are located in the:
   - a. Anterior limb of the internal capsule
   - b. Genu of the internal capsule
   - c. Posterior limb of the internal capsule
   - d. Sublenticular part of the internal capsule

10. The optic radiation projects to the visual cortex from the:
    - a. Medial geniculate nucleus
    - b. Ventral posterior nucleus
    - c. Lateral geniculate nucleus
    - d. Dorsomedial nucleus

11. Which commissural fiber tract connects corresponding cortical areas?
    - a. Corpus callosum
    - b. Anterior commissure
    - c. Hippocampal commissure
    - d. Habenular commissure

12. The splenium of the corpus callosum is located:
    - a. Anteriorly
    - b. Posteriorly
    - c. Dorsally
    - d. Ventrally

13. The anterior commissure is located near the:

a. Columns of the fornix
b. Mammillary bodies
c. Pituitary gland
d. Optic chiasm

14. The hippocampal commissure connects the:

a. Temporal lobes
b. Frontal lobes
c. Hippocampal formations
d. Olfactory bulbs

15. The neocortex is characterized by having:

a. Three layers
b. A uniform structure
c. Six layers
d. A predominance of glial cells

16. The largest pyramidal neurons are found in:

a. Layer I
b. Layer II
c. Layer IV
d. Layer V

17. The external granular layer (layer IV) receives input from the:

a. Thalamus

b. Other cortical areas

c. Subcortical white matter

d. Spinal cord

18. Layer III of the neocortex contributes to:

a. Sensory perception

b. Motor function

c. Interhemispheric communication

d. Association between cortical areas

19. Corticothalamic neurons projecting to the thalamus originate from:

a. Layer I

b. Layer III

c. Layer V

d. Layer VI

20. Brodmann's areas are cortical regions classified based on:

a. Function

b. Blood supply

c. Cellular architecture

d. Myelin content

Answers to MCQs on The White Matter

1. c) Origin and destination

2. b) Adjacent gyri in the same hemisphere

3. a) Parahippocampal gyrus

4. c) Occipital and temporal lobes

5. b) Brainstem and spinal cord

6. c) Both ascending and descending fibers

7. a) Lentiform nucleus and thalamus

8. a) Cranial nerve nuclei

9. c) Posterior limb of the internal capsule

10. c) Lateral geniculate nucleus

11. a) Corpus callosum

12. b) Posteriorly

13. a) Columns of the fornix

14. c) Hippocampal formations

15. c) Six layers

16. d) Layer V

17. a) Thalamus

18. d) Association between cortical areas

19. c) Layer VI

20. c) Cellular architecture

MCQs on The lec 4: Basal Ganglia

1. The basal ganglia are involved in:

a. Sensory perception

b. Initiation and control of voluntary movements

c. Regulation of body temperature

d. Processing auditory information

2. Damage to the basal ganglia can be associated with which of the following diseases?

a. Alzheimer's disease

b. Parkinson's disease

c. Multiple sclerosis

d. Epilepsy

3. The corpus striatum consists of which two structures?

a. Caudate nucleus and putamen

b. Globus pallidus and subthalamic nucleus

c. Substantia nigra and thalamus

d. Putamen and claustrum

4. The head of the caudate nucleus forms the lateral wall of which brain ventricle?

a. Third ventricle

b. Fourth ventricle

c. Lateral ventricle

d. Cisterna magna

5. The putamen and globus pallidus together are known as the:

a. Striatum

b. Lentiform nucleus

c. Subthalamic nucleus

d. Substantia nigra

6. The major outflow of information from the basal ganglia to the motor areas arises from:

a. Putamen

b. Globus pallidus internus

c. Caudate nucleus

d. Subthalamic nucleus

7. Deep brain stimulation is a treatment option for which of the following conditions?

a. Huntington's disease

b. Parkinson's disease

c. Alzheimer's disease

d. Multiple sclerosis

8. The substantia nigra is located in the:

a. Diencephalon

b. Midbrain

c. Pons

d. Medulla oblongata

9. Degeneration of which part of the substantia nigra is a hallmark of Parkinson's disease?

a. Pars compacta

b. Pars reticularis

c. Ventral tegmental area

d. Subthalamic nucleus

10. The nigrostriatal tract originates from the substantia nigra and innervates:

a. Thalamus

b. Cerebellum

c. Striatum

d. Subthalamic nucleus

11. The basal ganglia are considered part of the:

a. Limbic system

b. Extrapyramidal system

c. Sensory system

d. Autonomic nervous system

12. Which of the following statements about the caudate nucleus is FALSE?

a. It has a C-shaped appearance in lateral view.

b. Its tail is in contact with the amygdala.

c. It receives dopaminergic input from the substantia nigra.

d. It is the primary source of output information from the basal ganglia.

13. The lentiform nucleus is separated from the head of the caudate nucleus by which structure?

a. Internal capsule

b. External capsule

c. Claustrum

d. Insula

14. Compared to the putamen, the globus pallidus has a deeper location within the:

a. Lateral ventricle

b. External capsule

c. Lentiform nucleus

d. Thalamus

15. The subthalamic nucleus is a target for deep brain stimulation in Parkinson's disease because it:

a. Sends excitatory signals to the substantia nigra

b. Provides inhibitory input to the globus pallidus externus

c. Contributes to the tremor and rigidity symptoms

d. All of the above

16. The pars compacta and pars reticularis are subdivisions of which structure?

a. Subthalamic nucleus

b. Globus pallidus

c. Substantia nigra

d. Caudate nucleus

17. Degeneration of the basal ganglia can lead to:

a. Increased muscle tone and rigidity

b. Loss of balance and coordination

c. Difficulty initiating movement

d. All of the above

18. Which of the following brain regions is NOT directly connected to the basal ganglia?

a. Prefrontal cortex

b. Primary motor cortex

c. Cerebellum

d. Spinal cord

19. The basal ganglia are thought to play a role in:

a. Learning and reward processing

b. Regulation of sleep-wake cycles

c. Processing visual information

d. Control of heart rate and blood pressure

20. Research suggests that the basal ganglia may be involved in:

a. Habit formation

b. Emotional regulation

c. Decision-making

d. All of the above

Answers to MCQs on The Basal Ganglia

1. b) Initiation and control of voluntary movements
2. b) Parkinson's disease
3. a) Caudate nucleus and putamen
4. c) Lateral ventricle
5. b) Lentiform nucleus
6. b) Globus pallidus internus
7. b) Parkinson's disease
8. b) Midbrain
9. a) Pars compacta
10. c) Striatum
11. b) Extrapyramidal system
12. d) It is the primary source of output information from the basal ganglia.
13. a) Internal capsule
14. c) Lentiform nucleus
15. d) All of the above
16. c) Substantia nigra
17. d) All of the above
18. d) Spinal cord (indirectly connected through brainstem and thalamus)
19. a) Learning and reward processing
20. d) All of the above

MCQs on Lec 5: Limbic System.

1. The word "limbic" is derived from a Latin word meaning:

a. Border

b. Memory

c. Emotion

d. Thought

2. The limbic system is involved in:

a. Sensory perception

b. Emotional responses

c. Regulation of body temperature

d. Motor control

3. Which of the following structures is NOT part of the limbic system?

a. Amygdala

b. Thalamus

c. Primary motor cortex

d. Cingulate gyrus

4. The hippocampus is located in the:

a. Frontal lobe

b. Temporal lobe

c. Parietal lobe

d. Occipital lobe

5. The main inflow of information to the hippocampus comes from the:
  a. Entorhinal cortex
  b. Prefrontal cortex
  c. Primary somatosensory cortex
  d. Visual cortex

6. The fornix is a C-shaped structure that connects the hippocampus to the:
  a. Mammillary bodies
  b. Thalamus
  c. Amygdala
  d. Hypothalamus

7. The Papez circuit is a loop of interconnected structures involved in:
  a. Emotion
  b. Memory formation
  c. Sensory processing
  d. Movement coordination

8. The amygdala is an almond-shaped structure located near the:
  a. Hippocampus
  b. Thalamus
  c. Pituitary gland
  d. Primary motor cortex

9. The amygdala receives sensory information from:

a. Cortical association areas

b. Spinal cord

c. Brainstem

d. All of the above

10. The stria terminalis is the major output pathway of the amygdala and projects to the:

a. Hypothalamus

b. Thalamus

c. Cingulate gyrus

d. Hippocampus

11. The septum is a group of nuclei located near the:

a. Corpus callosum

b. Fornix

c. Internal capsule

d. Medulla oblongata

12. The medial forebrain bundle is a projection from the septum that influences behavior via connections to the:

a. Hypothalamus and brainstem

b. Thalamus and cerebellum

c. Prefrontal cortex and basal ganglia

d. Primary motor cortex and sensory cortex

13. The olfactory system bypasses the thalamus and projects directly to:

a. Frontal lobe

b. Temporal lobe

c. Occipital lobe

d. Brainstem

14. Specialized olfactory epithelium is located in the:

a. Olfactory bulb

b. Olfactory tract

c. Superior nasal cavity

d. Cribriform plate

15. The olfactory bulb projects to the olfactory cortex located on the:

a. Medial surface of the frontal lobe

b. Lateral surface of the frontal lobe

c. Inferomedial aspect of the temporal lobe

d. Dorsolateral aspect of the temporal lobe

16. The olfactory cortex has connections with all of the following EXCEPT:

a. Amygdala

b. Hippocampus

c. Primary visual cortex

d. Orbitofrontal cortex

17. Damage to the amygdala can impair the ability to:

a. Recognize facial expressions of emotion

b. Form new memories

c. Control body temperature

d. Detect auditory stimuli

18. Which of the following is NOT a function associated with the limbic system?

a. Processing pain sensations

b. Regulating sleep-wake cycles

c. Motivation and reward seeking

d. Consolidation of long-term memories

19. Research suggests that the limbic system may play a role in:

a. Addiction

b. Depression

c. Anxiety

d. All of the above

20. The limbic system is critical for integrating emotional responses with:

a. Sensory perception

b. Motor control

c. Memory formation

d. All of the above

Answers to MCQs on The Limbic System

1. a) Border
2. b) Emotional responses
3. c) Primary motor cortex
4. b) Temporal lobe
5. a) Entorhinal cortex
6. a) Mammillary bodies
7. b) Memory formation
8. a) Hippocampus
9. d) All of the above
10. a) Hypothalamus
11. a) Corpus callosum
12. a) Hypothalamus and brainstem
13. a) Frontal lobe
14. c) Superior nasal cavity
15. c) Inferomedial aspect of the temporal lobe
16. c) Primary visual cortex
17. a) Recognize facial expressions of emotion
18. a) Processing pain sensations (primarily sensory function)
19. d) All of the above
20. d) All of the above

MCQs on Lec 6: The Diencephalon

1. The diencephalon is composed of how many main structures?

a) 2

b) 3

c) 4

d) 5

2. The largest part of the diencephalon is the:

a) Thalamus

b) Hypothalamus

c) Epithalamus

d) Subthalamus

3. The thalamus is involved in all of the following EXCEPT:

a) Processing sensory information

b) Regulating sleep-wake cycles

c) Controlling heart rate

d) Forming memories

4. Each thalamus is located on which side of the third ventricle?

a) Dorsal

b) Ventral

c) Lateral (one on each side)

d) Medial

5. The main function of the medial geniculate nucleus is to act as a relay station for the:

a) Visual pathway

b) Auditory pathway

c) Somatosensory pathway

d) Taste pathway

6. The reticular nucleus of the thalamus is responsible for:

a) Relaying sensory information

b) Modulating thalamocortical activity

c) Secreting hormones

d) Processing emotional responses

7. The hypothalamus is critical for maintaining:

a) Balance

b) Homeostasis

c) Consciousness

d) Vision

8. The pituitary gland is connected to the hypothalamus by the:

a) Optic chiasm

b) Infundibulum

c) Fornix

d) Mammillary bodies

9. The adenohypophysis of the pituitary gland is responsible for the production of all of the following hormones EXCEPT:

a) Antidiuretic hormone

b) Growth hormone

c) Thyroid-stimulating hormone

d) Prolactin

10. The neurohypophysis stores and releases hormones produced by the:

a) Supraoptic and paraventricular nuclei of the hypothalamus

b) Adenohypophysis

c) Pineal gland

d) Thalamus

11. Pituitary tumors can cause a variety of symptoms, including:

a) Bitemporal hemianopia (vision loss in half of each visual field)

b) Hearing loss

c) Loss of taste

d) Impaired sense of smell

12. The main function of the pineal gland is to secrete:

a) Melatonin (involved in sleep-wake cycle)

b) Oxytocin (involved in childbirth and bonding)

c) Growth hormone

d) Thyroid-stimulating hormone

13. The habenular nuclei receive input from the thalamus via the:

a) Stria terminalis

b) Fornix

c) Stria medullaris thalami

d) Mammillothalamic tract

14. The subthalamus is located near which other brain structure?

a) Hippocampus

b) Amygdala

c) Midbrain

d) Pons

15. The subthalamic nucleus plays a role in:

a) Regulating body temperature

b) Controlling motor function

c) Processing olfactory information

d) Mediating emotional responses

16. Damage to the thalamus can impair a person's ability to:

a) See

b) Hear

c) Feel pain

d) All of the above

17. The hypothalamus communicates with the brainstem through which pathway(s)?

a) Dorsal longitudinal fasciculus

b) Medial forebrain bundle

c) Mamillotegmental tract

d) All of the above

18. The thalamus relays sensory information to the appropriate cortical areas in the:

a) Frontal lobe

b) Temporal lobe

c) Parietal lobe

d) All of the above

19. The hypothalamus is connected to the limbic system via the:

a) Mammillary bodies

b) Fornix

c) Cingulate gyrus

d) All of the above

20. The diencephalon plays a vital role in integrating sensory information with:

a) Motor responses

b) Emotional responses

c) Memory formation

d) All of the above

Answers to MCQs on The Diencephalon

1. c) 4

2. a) Thalamus

3. c) Controlling heart rate (primarily autonomic function)

4. c) Lateral (one on each side)

5. b) Auditory pathway

6. b) Modulating thalamocortical activity

7. b) Homeostasis

8. b) Infundibulum

9. a) Antidiuretic hormone (produced by the hypothalamus)

10. a) Supraoptic and paraventricular nuclei of the hypothalamus

11. a) Bitemporal hemianopia (vision loss in half of each visual field) due to compression of the optic chiasm

12. a) Melatonin (involved in sleep-wake cycle)

13. c) Stria medullaris thalami

14. c) Midbrain

15. b) Controlling motor function

16. d) All of the above (thalamus relays sensory information to the cortex)

17. d) All of the above

18. d) All of the above (frontal, temporal, and parietal lobes)

19. d) All of the above

20. d) All of the above

MCQs about the cerebellum lec 7

1. The cerebellum is located in the:

a) frontal lobe

b) posterior cranial fossa

c) temporal lobe

d) parietal lobe

2. The two prominent fissures that separate the cerebellum into distinct lobes are:

a) primary fissure and calcarine fissure

b) central fissure and lateral sulcus

c) primary fissure and posterolateral fissure

d) corpus callosum and cingulate gyrus

3. The cerebellar tonsils are located:

a) superiorly

b) anteriorly

c) inferiorly

d) posteriorly

4. The three pairs of fiber bundles that connect the cerebellum to the brainstem are known as the:

a) superior, middle, and inferior colliculi

b) superior, middle, and inferior cerebellar peduncles

c) superior, middle, and inferior frontal gyri

d) superior, middle, and inferior temporal gyri

5. The histological arrangement of the cerebellar cortex consists of how many layers?

a) 2

b) 3

c) 4

d) 5

6. The only source of climbing fibers into the cerebellum is from the:

a) vestibular system

b) spinal cord

c) inferior olivary nucleus

d) pontine nuclei

7. Mossy fibers terminate on:

a) Purkinje cells

b) granule cells

c) stellate cells

d) basket cells

8. Purkinje cell axons project to:

a) the cerebral cortex

b) the deep cerebellar nuclei

c) the brainstem

d) the spinal cord

9. The archicerebellum is responsible for:
  a) balance and eye movements
  b) muscle tone and posture
  c) fine motor control
  d) spatial awareness

10. Lesions of the spinocerebellum can result in:
  a) tremors
  b) ataxia
  c) dysarthria
  d) aphasia

11. The neocerebellum receives afferent fibers from the:
  a) spinal cord
  b) vestibular system
  c) cerebral cortex
  d) brainstem

12. The dentate nucleus projects to:
  a) the red nucleus and ventrolateral thalamus
  b) the inferior olivary nucleus
  c) the vestibular nuclei
  d) the pontine nuclei

13. Cerebellar clinical signs are typically:

a) ipsilateral to the lesion

b) contralateral to the lesion

c) bilateral

14. The cerebellar cortex is involved in:

a) memory

b) emotion

c) motor control

d) language

15. The flocculonodular lobe is part of the:

a) neocerebellum

b) paleocerebellum

c) archicerebellum

d) vermis

16. The corticopontine-cerebellar pathway originates in the:

a) cerebellum

b) brainstem

c) spinal cord

d) cerebral cortex

17. The cerebellar peduncles connect the cerebellum to the:

a) thalamus

b) hypothalamus

c) brainstem

d) limbic system

18. The arbor vitae refers to the appearance of the:

a) cerebellar white matter

b) cerebellar grey matter

c) cerebellar cortex

d) cerebellar peduncles

19. Ataxia is a symptom of:

a) cerebellar dysfunction

b) cerebral dysfunction

c) brainstem dysfunction

d) spinal cord dysfunction

20. The cerebellum is crucial for:

a) initiating movements

b) coordinating and timing movements

c) sensory perception

d) higher-order thinking

the answers to lec 7 MCQs:

1. b) posterior cranial fossa

2. c) primary fissure and posterolateral fissure

3. c) inferiorly

4. b) superior, middle, and inferior cerebellar peduncles

5. b) 3

6. c) inferior olivary nucleus

7. b) granule cells

8. b) the deep cerebellar nuclei

9. a) balance and eye movements

10. b) ataxia

11. c) cerebral cortex

12. a) the red nucleus and ventrolateral thalamus

13. a) ipsilateral to the lesion

14. c) motor control

15. c) archicerebellum

16. d) cerebral cortex

17. c) brainstem

18. a) cerebellar white matter

19. a) cerebellar dysfunction

20. b) coordinating and timing movements

MCQs about the Ventricular System

Instructions: Choose the best answer for each question.

1. Which of the following structures is NOT part of the ventricular system?

a) Lateral ventricle

b) Third ventricle

c) Cerebral aqueduct

d) Pituitary gland

e) Fourth ventricle

2. What is the primary function of cerebrospinal fluid (CSF)?

a) To provide nutrients to the brain

b) To remove waste products from the brain

c) To cushion and protect the brain

d) To regulate intracranial pressure

e) All of the above

3. Where is the choroid plexus located?

a) Only in the lateral ventricles

b) Only in the third ventricle

c) Only in the fourth ventricle

d) In the lateral, third, and fourth ventricles

e) In the subarachnoid space

4. What structure connects the lateral ventricles to the third ventricle?

a) Interventricular foramen of Monro

b) Cerebral aqueduct

c) Foramen of Magendie

d) Foramina of Luschka

e) None of the above

5. What is the massa intermedia?

a) A structure that separates the lateral ventricles

b) A thin membrane forming the roof of the third ventricle

c) A connection between the thalami in the third ventricle

d) A structure that regulates CSF flow

e) A part of the choroid plexus

6. Which of the following structures forms the floor of the fourth ventricle?

a) Pons and medulla

b) Cerebellum

c) Thalamus

d) Hypothalamus

e) Corpus callosum

7. What is the function of the foramina of Luschka and the foramen of Magendie?

a) To connect the ventricles to the spinal canal
b) To produce CSF
c) To regulate CSF pressure
d) To allow CSF to flow from the ventricular system into the subarachnoid space
e) To connect the ventricles to the dural venous sinuses

8. What are the circumventricular organs?

a) Structures that regulate blood flow to the brain
b) Structures that produce CSF
c) Structures around the third and fourth ventricles that lack a blood-brain barrier
d) Structures that control movement
e) Structures that regulate temperature

9. Which of the following is NOT a circumventricular organ?

a) Subfornical organ
b) Subcommissural organ
c) Organum vasculosum of the lamina terminalis
d) Corpus callosum
e) Area postrema

10. What is the function of the pineal gland?

a) To regulate sleep-wake cycles
b) To produce hormones
c) To regulate body temperature
d) To produce melatonin, a hormone that regulates sleep-wake cycles
e) All of the above

11. What is the function of the facial colliculus in the fourth ventricle?

a) To regulate breathing
b) To control eye movements
c) To allow facial nerve fibers to arch over the abducent nucleus
d) To produce CSF
e) To regulate blood pressure

12. Which of the following structures is involved in the production of CSF?

a) Choroid plexus
b) Arachnoid granulations
c) Dural venous sinuses
d) Subarachnoid space
e) None of the above

13. What is the function of the arachnoid granulations?

a) To produce CSF

b) To regulate CSF pressure

c) To allow CSF to pass from the subarachnoid space into the dural venous sinuses

d) To connect the ventricles to the spinal canal

e) To regulate blood flow to the brain

14. What is the name of the thin membrane that separates the frontal horns of the lateral ventricles?

a) Septum pellucidum

b) Corpus callosum

c) Fornix

d) Thalamus

e) Hypothalamus

15. What is the function of the inferior medullary velum in the fourth ventricle?

a) To connect the fourth ventricle to the spinal canal

b) To regulate CSF pressure

c) To form the choroid plexus of the fourth ventricle

d) To separate the lateral recesses of the fourth ventricle

e) To allow CSF to flow into the subarachnoid space

Answer Key:

1. d) Pituitary gland
2. e) All of the above
3. d) In the lateral, third, and fourth ventricles
4. a) Interventricular foramen of Monro
5. c) A connection between the thalami in the third ventricle

6. a) Pons and medulla
7. d) To allow CSF to flow from the ventricular system into the subarachnoid space
8. c) Structures around the third and fourth ventricles that lack a blood-brain barrier
9. d) Corpus callosum
10. d) To produce melatonin, a hormone that regulates sleep-wake cycles
11. c) To allow facial nerve fibers to arch over the abducent nucleus
12. a) Choroid plexus
13. c) To allow CSF to pass from the subarachnoid space into the dural venous sinuses
14. a) Septum pellucidum
15. c) To form the choroid plexus of the fourth ventricle

MCQs about CSF Circulation

Instructions: Choose the best answer for each question.

1. What is the primary site of CSF production?

   a) Arachnoid villi

   b) Superior sagittal sinus

   c) Choroid plexuses of the ventricles

   d) Subarachnoid space

   e) Perineural lymphatics

2. What is the approximate volume of CSF in the subarachnoid space?

   a) 30 mL

   b) 100 mL

   c) 130 mL

   d) 20 mL

   e) 50 mL

3. How often is the CSF completely replaced?

   a) Every hour

   b) Every 12 hours

   c) Approximately three times a day

   d) Once a week

   e) Once a month

4. What is the primary mechanism for CSF reabsorption into the bloodstream?

    a) Direct passage into the cerebral ventricles

    b) Absorption into the perineural lymphatics

    c) Passage through the arachnoid villi into the superior sagittal sinus

    d) Diffusion across the blood-brain barrier

    e) Active transport by ependymal cells

5. What condition occurs when there is a disturbance in the balance of CSF production and reabsorption, leading to ventricular distention?

    a) Meningitis

    b) Encephalitis

    c) Hydrocephalus

    d) Cerebral palsy

    e) Spinal bifida

Answer Key:

1. c) Choroid plexuses of the ventricles
2. b) 100 mL
3. c) Approximately three times a day
4. c) Passage through the arachnoid villi into the superior sagittal sinus
5. c) Hydrocephalus

MCQs about Blood Supply of the Brain and Spinal Cord

Instructions: Choose the best answer for each question.

1. What makes the intracranial vascular system susceptible to changes in intracranial pressure?

a) The presence of a large number of blood vessels in the brain.

b) The lack of a blood-brain barrier.

c) The unyielding nature of the skull and spinal dura, and the incompressibility of the brain and CSF.

d) The high metabolic rate of the brain.

e) The presence of a circle of Willis.

2. What percentage of the cardiac output does the brain typically receive?

a) 5%

b) 10%

c) 15%

d) 20%

e) 25%

3. Which arteries are considered part of the anterior circulation of the brain?

a) Vertebral arteries

b) Posterior cerebral arteries

c) Internal carotid arteries

d) Basilar artery

e) Posterior inferior cerebellar arteries

4. Which arteries are considered part of the posterior circulation of the brain?

a) Internal carotid arteries

b) Anterior cerebral arteries

c) Middle cerebral arteries

d) Vertebral arteries

e) Anterior communicating artery

5. What is the name of the anastomotic circle at the base of the brain?

a) Circle of Vieussens

b) Circle of Willis

c) Circle of Zinn

d) Circle of Arnold

e) Circle of Galen

6. What is the name of the S-shaped course of the internal carotid artery within the cavernous sinus?

a) Carotid canal

b) Carotid siphon

c) Carotid foramen

d) Carotid sinus

e) Carotid body

7. Which artery supplies the medial aspects of the frontal and parietal lobes, including the area of the primary motor cortex controlling lower limb movement?

a) Middle cerebral artery

b) Anterior cerebral artery

c) Posterior cerebral artery

d) Vertebral artery

e) Basilar artery

8. Which artery supplies the head of the caudate nucleus and the anterior limb of the internal capsule?

a) Callosomarginal artery

b) Pericallosal artery

c) Recurrent artery of Heubner

d) Lateral lenticulostriate artery

e) Anterior choroidal artery

9. Which artery supplies the majority of the lateral convexity of the cerebral hemispheres?

a) Anterior cerebral artery

b) Middle cerebral artery

c) Posterior cerebral artery

d) Anterior choroidal artery

e) Ophthalmic artery

10. Which artery supplies portions of the optic pathways, including the optic tract, lateral geniculate nuclei, and optic radiations?

a) Middle cerebral artery

b) Anterior cerebral artery

c) Posterior cerebral artery

d) Anterior choroidal artery

e) Ophthalmic artery

11. Which artery supplies the majority of the orbital structures?

a) Middle cerebral artery

b) Anterior cerebral artery

c) Posterior cerebral artery

d) Anterior choroidal artery

e) Ophthalmic artery

12. Which artery joins the internal carotid artery to the posterior cerebral artery?

a) Anterior communicating artery

b) Posterior communicating artery

c) Anterior choroidal artery

d) Ophthalmic artery

e) Recurrent artery of Heubner

13. Which artery is formed by the fusion of the two vertebral arteries?

a) Anterior spinal artery

b) Posterior spinal artery

c) Basilar artery

d) Posterior inferior cerebellar artery

e) Superior cerebellar artery

14. Which artery supplies the lateral part of the medulla, the inferior cerebellar peduncle, and the suboccipital surface of the cerebellum?

a) Anterior inferior cerebellar artery

b) Posterior inferior cerebellar artery

c) Superior cerebellar artery

d) Anterior spinal artery

e) Posterior spinal artery

15. What is the name of the syndrome that can result from occlusion of the posterior inferior cerebellar artery?

a) Wallenberg syndrome

b) Horner syndrome

c) Brown-Séquard syndrome

d) Locked-in syndrome

e) Anterior spinal cord syndrome

16. Which artery supplies the pons, middle cerebellar peduncle, and anterior surface of the cerebellum?

a) Anterior inferior cerebellar artery

b) Posterior inferior cerebellar artery

c) Superior cerebellar artery

d) Anterior spinal artery

e) Posterior spinal artery

17. Which artery supplies the inner ear structures?

a) Labyrinthine artery
b) Anterior inferior cerebellar artery
c) Posterior inferior cerebellar artery
d) Superior cerebellar artery
e) Anterior spinal artery

18. Which artery supplies the midbrain, superior cerebellar peduncle, and tentorial surface of the cerebellum?

a) Anterior inferior cerebellar artery
b) Posterior inferior cerebellar artery
c) Superior cerebellar artery
d) Anterior spinal artery
e) Posterior spinal artery

19. Which artery supplies the thalamus?

a) Posterior cerebral artery
b) Middle cerebral artery
c) Anterior cerebral artery
d) Anterior choroidal artery
e) Ophthalmic artery

20. What is the name of the large vessel, typically derived from a left-sided posterior intercostal vessel, that supplies an extensive number of thoracolumbar spinal cord segments?

a) Artery of Adamkiewicz

b) Artery of Willis

c) Artery of Heubner

d) Artery of Galen

e) Artery of Zinn

Answer Key:

1. c) The unyielding nature of the skull and spinal dura, and the incompressibility of the brain and CSF.
2. d) 20%
3. c) Internal carotid arteries
4. d) Vertebral arteries
5. b) Circle of Willis
6. b) Carotid siphon
7. b) Anterior cerebral artery
8. c) Recurrent artery of Heubner
9. b) Middle cerebral artery
10. d) Anterior choroidal artery
11. e) Ophthalmic artery
12. b) Posterior communicating artery
13. c) Basilar artery
14. b) Posterior inferior cerebellar artery
15. a) Wallenberg syndrome
16. a) Anterior inferior cerebellar artery
17. a) Labyrinthine artery
18. c) Superior cerebellar artery

19. a) Posterior cerebral artery

20. a) Artery of Adamkiewicz

Clinical MCQs about Blood Supply of the Brain and Spinal Cord

1. A patient presents with a stroke affecting the lateral aspect of the frontal and parietal lobes. Which artery is most likely affected?

a) Anterior cerebral artery

b) Middle cerebral artery

c) Posterior cerebral artery

d) Vertebral artery

2. A patient with a history of hypertension presents with a sudden onset of severe headache and stiff neck. A CT scan reveals a subarachnoid hemorrhage. What is the most likely cause?

a) Thrombosis of the middle cerebral artery

b) Rupture of a berry aneurysm

c) Occlusion of the posterior inferior cerebellar artery

d) Damage to the artery of Adamkiewicz

3. A patient with a history of diabetes develops a stroke affecting the medial aspect of the frontal and parietal lobes. Which artery is most likely affected?

a) Anterior cerebral artery

b) Middle cerebral artery

c) Posterior cerebral artery

d) Basilar artery

4. A patient presents with a stroke affecting the lower limb motor cortex. Which artery is most likely affected?

a) Anterior cerebral artery

b) Middle cerebral artery

c) Posterior cerebral artery

d) Vertebral artery

5. A patient presents with a stroke affecting the thalamus. Which artery is most likely affected?

a) Anterior cerebral artery

b) Middle cerebral artery

c) Posterior cerebral artery

d) Anterior inferior cerebellar artery

6. A patient presents with a stroke affecting the lateral aspect of the medulla, the inferior cerebellar peduncle, and the suboccipital surface of the cerebellum. Which artery is most likely affected?

a) Posterior inferior cerebellar artery

b) Anterior inferior cerebellar artery

c) Superior cerebellar artery

d) Posterior spinal artery

7. A patient presents with an anterior spinal cord syndrome. Which artery is most likely affected?

a) Anterior spinal artery

b) Posterior spinal artery

c) Artery of Adamkiewicz

d) Posterior inferior cerebellar artery

8. A patient presents with a stroke affecting the pons, middle cerebellar peduncle, and the anterior surface of the cerebellum. Which artery is most likely affected?

a) Posterior inferior cerebellar artery

b) Anterior inferior cerebellar artery

c) Superior cerebellar artery

d) Posterior spinal artery

9. A patient presents with a stroke affecting the optic tract, lateral geniculate nuclei, and optic radiations. Which artery is most likely affected?

a) Anterior choroidal artery

b) Ophthalmic artery

c) Posterior communicating artery

d) Anterior cerebral artery

10. Which of the following is NOT a branch of the vertebral artery?

a) Posterior inferior cerebellar artery

b) Anterior spinal artery

c) Middle cerebral artery

d) Posterior spinal artery

Answer Key:

1. b) Middle cerebral artery
2. b) Rupture of a berry aneurysm
3. a) Anterior cerebral artery
4. a) Anterior cerebral artery
5. c) Posterior cerebral artery
6. a) Posterior inferior cerebellar artery
7. c) Artery of Adamkiewicz
8. b) Anterior inferior cerebellar artery
9. a) Anterior choroidal artery
10. c) Middle cerebral artery

Brainstem and Midbrain MCQs

Instructions: Choose the BEST answer for each question.

1. The brainstem connects which parts of the brain and spinal cord?

   * A) Cerebrum and cerebellum
   * B) Diencephalon and pons
   * C) (Insert Answer Choice Here)
   * D) Midbrain and medulla oblongata

2. The brainstem extends from which point to which point?

   * A) Frontal lobe to occipital lobe
   * B) Tentorial notch to first cervical vertebra
   * C) Corpus callosum to thalamus
   * D) (Insert Answer Choice Here)

3. Which cerebellar peduncle connects to the midbrain?

   * A) Superior cerebellar peduncle
   * B) Middle cerebellar peduncle
   * C) Inferior cerebellar peduncle
   * D) All of the above

4. One of the three main functions of the brainstem is:

   * A) Processing visual information

   * B) Controlling breathing and heart rate

   * C) Balancing emotions

   * D) Storing memories

5. The brainstem contains nuclei for cranial nerves:

   * A) I and II only

   * B) III to XII

   * C) VII and VIII only

   * D) X and XI only

6. Which structure in the midbrain is associated with vision?

   * A) Periaqueductal gray matter

   * B) Superior colliculus

   * C) Inferior colliculus

   * D) Crus cerebri

7. The trochlear nerve (IV) is unique because it:

   * A) Is the largest cranial nerve

   * B) Arises from the brainstem ventral surface

   * C) Arises from the brainstem dorsal surface

   * D) Does not decussate

8. The cerebral aqueduct connects which ventricles?

* A) Lateral ventricles

* B) Third and fourth ventricles

* C) Fourth ventricle and cisterna magna

* D) Third ventricle and subarachnoid space

9. The substantia nigra is part of which structure in the midbrain?

* A) Tectum

* B) Cerebral peduncle

* C) Tegmentum

* D) Superior colliculus

10. The inferior colliculus is associated with which sense?

* A) Vision

* B) Hearing

* C) Taste

* D) Touch

11. The posterior perforated substance is located between which structures in the midbrain?

* A) Superior and inferior colliculi

* B) Cerebral aqueduct and crura cerebri

* C) Crus cerebri and pons

* D) Tectum and tegmentum

12. Which of the following is NOT a part of the midbrain?

* A) Superior colliculus
* B) Mamillary bodies
* C) Medulla oblongata
* D) Inferior colliculus

13. The crura cerebri appear as:

* A) Two diverging fiber bundles
* B) Two converging fiber bundles
* C) A single, flattened structure
* D) A hollow tube

14. The optic tract interacts with which structure in the midbrain?

* A) Periaqueductal gray matter
* B) Crus cerebri
* C) Inferior colliculus
* D) Superior cerebellar peduncle

15. The midbrain is the:

* A) Longest part of the brainstem
* B) Shortest part of the brainstem
* C) Widest part of the brainstem
* D) Most anterior part of the brainstem

here are the answers to the MCQs:

1. C) Cerebrum and spinal cord
2. B) Tentorial notch to first cervical vertebra
3. A) Superior cerebellar peduncle
4. B) Controlling breathing and heart rate
5. B) III to XII
6. B) Superior colliculus
7. C) Arises from the brainstem dorsal surface
8. B) Third and fourth ventricles
9. B) Cerebral peduncle
10. B) Hearing
11. B) Cerebral aqueduct and crura cerebri
12. C) Medulla oblongata
13. B) Two converging fiber bundles
14. B) Crus cerebri
15. B) Shortest part of the brainstem

MCQs about Pons Anatomy

Instructions: Choose the BEST answer for each question.

1. The pons is located:

  * A) Above the midbrain
  * B) Below the medulla oblongata
  * C) Between the midbrain and medulla oblongata
  * D) Rostral to the cerebellum

2. Which surface of the pons is hidden by the cerebellum?

  * A) Ventral surface
  * B) Dorsal surface
  * C) Medial surface
  * D) Lateral surface

3. The basilar sulcus on the ventral surface of the pons accommodates:

  * A) Trigeminal nerve
  * B) Basilar artery
  * C) Superior cerebellar artery
  * D) Facial colliculus

4. The middle cerebellar peduncle originates from:

* A) Medulla oblongata

* B) Pons

* C) Midbrain

* D) Cerebellum

5. Identify the cranial nerve that emerges at the junction of the ventral pons and middle cerebellar peduncle:

* A) Oculomotor nerve (III)

* B) Trochlear nerve (IV)

* C) Trigeminal nerve (V) (with two roots)

* D) Abducens nerve (VI)

6. The striae medullares are located on the dorsal surface of the pons and:

* A) Form the floor of the fourth ventricle

* B) Are part of the middle cerebellar peduncle

* C) Contain aberrant fibers from the arcuate nucleus

* D) House the facial colliculus

7. The facial colliculus is caused by:

* A) Trigeminal nerve fibers

* B) Facial nerve fibers winding around the abducens nucleus

* C) Superior cerebellar artery

* D) Medial longitudinal bundle

8. The corticospinal fibers in the pons are found in which part?

* A) Tegmentum only
* B) Basilar part only
* C) Both basilar part and tegmentum
* D) Neither basilar part nor tegmentum

9. The pontine nuclei are located in the:

* A) Tegmentum
* B) Basilar part
* C) Medial eminence
* D) Vestibular area

10. The pontocerebellar fibers travel through:

* A) Superior cerebellar peduncle
* B) Middle cerebellar peduncle
* C) Inferior cerebellar peduncle
* D) All of the above

11. The spinal nucleus of the trigeminal nerve is responsible for:

* A) Vision
* B) Hearing
* C) Pain and temperature from the face
* D) Balance and equilibrium

12. The medial longitudinal bundle coordinates movements of:

  * A) Eyes and tongue

  * B) Head and neck

  * C) Eyes, head, and neck

  * D) All of the above

13. The vestibular nuclei receive input from the:

  * A) Trigeminal nerve

  * B) Cochlear nerve

  * C) Optic nerve

  * D) Oculomotor nerve

14. The trapezoid body is formed by:

  * A) Fibers from the abducens nucleus

  * B) Decussating fibers of the ventral cochlear nuclei

  * C) Facial colliculus

  * D) Striae medullares

15. The reticular formation of the pons is located:

  * A) Ventral to the pontine nuclei

  * B) Dorsal to the pontine nuclei

  * C) Within the facial colliculus

  * D) Lateral to the middle cerebellar peduncle

The answers to the MCQs

1. C) Between the midbrain and medulla oblongata

2. B) Dorsal surface

3. B) Basilar artery

4. B) Pons

5. C) Trigeminal nerve (V) (with two roots)

6. C) Contain aberrant fibers from the arcuate nucleus

7. B) Facial nerve fibers winding around the abducens nucleus

8. C) Both basilar part and tegmentum

9. B) Basilar part

10. B) Middle cerebellar peduncle

11. C) Pain and temperature from the face

12. C) Eyes, head, and neck

13. B) Cochlear nerve

14. B) Decussating fibers of the ventral cochlear nuclei

15. B) Dorsal to the pontine nuclei

MCQs about Medulla Oblongata Anatomy

Instructions: Choose the BEST answer for each question.

1. The medulla oblongata is located:

   * A) Above the pons
   * B) Below the midbrain
   * C) Continuous with the spinal cord at the foramen magnum
   * D) Rostral to the cerebellum

2. Which part of the medulla oblongata has a central canal?

   * A) Upper part only (open medulla)
   * B) Lower part only (closed medulla)
   * C) Both upper and lower parts
   * D) Neither upper nor lower part

3. The anterior median fissure divides the medulla oblongata into:

   * A) Three regions
   * B) Four regions
   * C) Two symmetrical halves
   * D) Unequal halves (larger and smaller)

4. The pyramid on the ventral surface of the medulla is formed by:

 * A) Olivary nucleus

 * B) Corticospinal tract

 * C) Gracile and cuneate nuclei

 * D) Rootlets of cranial nerves

5. Which cranial nerve rootlets emerge between the pyramid and olive?

 * A) Trigeminal nerve (V)

 * B) Facial nerve (VII)

 * C) Hypoglossal nerve (XII)

 * D) Vagus nerve (X)

6. The olive on the ventral surface of the medulla is caused by:

 * A) Gracile tubercle

 * B) Inferior olivary nucleus

 * C) Decussation of pyramidal tracts

 * D) Rootlets of glossopharyngeal nerve

7. The inferior cerebellar peduncle is located:

 * A) Between the pyramid and olive

 * B) Lateral to the olive

 * C) Medial to the gracile tubercle

 * D) Within the hypoglossal triangle

8. The gracile and cuneate tubercles are found on the:

* A) Ventral surface

* B) Dorsal surface (closed medulla)

* C) Dorsal surface (open medulla)

* D) Lateral surface

9. The sensory decussation of internal arcuate fibers involves:

* A) Trigeminal lemniscus

* B) Second-order neurons from posterior columns

* C) Fibers from the inferior olivary nucleus

* D) Rootlets of the vagus nerve

10. The medial lemniscus ascends in the medulla oblongata after:

* A) Decussating to the same side

* B) Remaining uncrossed

* C) Decussating to the opposite side

* D) Splitting into two bundles

11. The posterior spinocerebellar tract:

* A) Crosses in the medulla

* B) Ascends uncrossed in the inferior cerebellar peduncle

* C) Descends in the lateral sulcus

* D) Forms the hypoglossal triangle

12. The vagal triangle on the dorsal surface of the open medulla overlies the nucleus of:

* A) Hypoglossal nerve (XII)

* B) Dorsal vagus nerve (X)

* C) Facial nerve (VII)

* D) Trigeminal nerve (V) sensory nucleus

13. The inferior fovea on the dorsal surface of the open medulla is located:

* A) Within the hypoglossal triangle

* B) At the division between the two triangles

* C) Lateral to the cuneate tubercle

* D) Ventral to the pyramid

14. All of the following structures are found in the medulla oblongata EXCEPT:

* A) Pyramids

* B) Olives

* C) Gracile and cuneate nuclei

* D) Trochlear nerve nucleus

15. The corticospinal tract in the medulla oblongata is responsible for:

* A) Vision

* B) Hearing

* C) Voluntary motor control

* D) Pain and temperature sensation

The answers to the MCQs

1. C) Continuous with the spinal cord at the foramen magnum
2. C) Both upper and lower parts
3. C) Two symmetrical halves
4. B) Corticospinal tract
5. C) Hypoglossal nerve (XII)
6. B) Inferior olivary nucleus
7. B) Lateral to the olive
8. B) Dorsal surface (closed medulla)
9. B) Second-order neurons from posterior columns
10. C) Decussating to the opposite side
11. B) Ascends uncrossed in the inferior cerebellar peduncle
12. B) Dorsal vagus nerve (X)
13. B) At the division between the two triangles
14. D) Trochlear nerve nucleus
15. C) Voluntary motor control

MCQs about Brainstem Nuclei part 1

Instructions: Choose the best answer for each question.

1. Which nucleus is responsible for motor innervation of the muscles of facial expression?

a) Motor nucleus of CN V

b) Motor nucleus of CN VII

c) Nucleus ambiguous

d) Inferior olivary nucleus

2. Where is the nucleus of the tractus solitarius located?

a) Ventral to the XII nucleus

b) Ventrolateral to the dorsal X nucleus

c) Deep to the pyramid

d) Lateral to the VII nucleus

3. Which nucleus receives taste fibers from the chorda tympani of CN VII?

a) Nucleus ambiguous

b) Dorsal nucleus of X nerve

c) Nucleus of tractus solitarius

d) Inferior olivary nucleus

4. Which nucleus is responsible for receiving equilibrium information from the vestibular nerve?

a) Vestibular nuclei

b) Cochlear nuclei

c) Spinal nucleus of CN V

d) Mesencephalic nucleus of CN V

5. Which nucleus receives touch impulses from the face?

a) Motor nucleus of CN V

b) Principal nucleus of V nerve

c) Nucleus of the superior colliculus

d) Pretectal nucleus

6. Where is the cuneate nucleus located?

a) Deep to the corresponding tubercles

b) Ventral to the facial colliculus

c) Lateral to the VII nucleus

d) Ventromedial to the aqueduct

7. Which nucleus provides motor fibers to the lateral rectus muscle?

a) CN VI nucleus

b) Motor nucleus of CN VII

c) Edinger-Westphal nucleus

d) Mesencephalic nucleus of CN V

8. Which nucleus is involved in the pupillary light reflex?

a) Motor nucleus of CN III

b) Edinger-Westphal nucleus

c) Pretectal nucleus

d) All of the above

9. Which nucleus receives proprioception from the masticatory, facial, ocular, and lingual muscles?

a) Mesencephalic nucleus of CN V

b) Spinal nucleus of CN V

c) Vestibular nuclei

d) Cochlear nuclei

10. Which nucleus is responsible for general visual reflexes?

a) Nucleus of the inferior colliculus

b) Nucleus of the superior colliculus

c) Pretectal nucleus

d) Motor nucleus of CN III

11. Which nucleus gives rise to the internal arcuate fibers that decussate to the medial lemniscus?

a) Cuneate & Gracile nuclei

b) Inferior olivary nucleus

c) Nucleus of tractus solitarius

d) Arcuate nucleus

12. Which nucleus provides motor innervations of muscles of facial expression?

a) Superior salivary nucleus

b) Motor nucleus of CN VII

c) Nucleus ambiguous

d) Inferior olivary nucleus

13. Which nucleus is involved in the cortico-ponto-cerebellar pathway?

a) Pontine nuclei

b) Vestibular nuclei

c) Cochlear nuclei

d) Red nucleus

14. Which nucleus is responsible for sending motor fibers to skeletal muscles of the larynx, soft palate, pharynx, and upper esophagus?

a) Nucleus ambiguous

b) Dorsal nucleus of X nerve

c) Inferior olivary nucleus

d) Arcuate nucleus

15. Which nucleus receives auditory information from the cochlear nerve?

a) Vestibular nuclei

b) Cochlear nuclei

c) Spinal nucleus of CN V

d) Mesencephalic nucleus of CN V

16. Which nucleus is involved in chemoreception and breathing control?

a) Arcuate nucleus

b) Inferior olivary nucleus

c) Nucleus ambiguous

d) Dorsal nucleus of X nerve

17. Which nucleus is responsible for general auditory reflexes?

a) Nucleus of the inferior colliculus

b) Nucleus of the superior colliculus

c) Pretectal nucleus

d) Motor nucleus of CN III

18. Which nucleus gives rise to the fibers of the XII nerve for lingual muscles?

a) CN XII nucleus

b) Dorsal nucleus of X nerve

c) Nucleus ambiguous

d) Inferior olivary nucleus

19. Which nucleus is responsible for parasympathetic fibers that join the IX nerve to reach the otic ganglion?

a) Inferior salivary nucleus

b) Superior salivary nucleus

c) Nucleus ambiguous

d) Dorsal nucleus of X nerve

20. Which nucleus is part of the extrapyramidal system?

a) Red nucleus

b) Substantia nigra

c) Edinger-Westphal nucleus

d) Pretectal nucleus

Answer Key:

1. b)
2. b)
3. c)
4. a)
5. b)
6. a)
7. a)
8. d)
9. a)
10. b)
11. a)
12. b)
13. a)
14. a)
15. b)
16. a)
17. a)
18. a)
19. a)
20. a)

MCQs about Brainstem Nuclei part 2

Instructions: Choose the best answer for each question.

1. Which of the following bundles carries pain from the opposite side of the body?

   a) Medial lemniscus

   b) Lateral spinothalamic tract

   c) Tectospinal tract

   d) Medial longitudinal bundle

2. Where is the pyramidal tract located in the upper MO section?

   a) Lateral to the olivary nucleus

   b) Between the olivary nucleus and CN X fibers

   c) Anterior part of the section

   d) Deep to the pyramid

3. Which of the following bundles is responsible for descending fibers from the colliculi (tectum) to the spinal cord?

   a) Rubrospinal tract

   b) Tectospinal tract

   c) Medial longitudinal bundle

   d) Lateral spinothalamic tract

4. Which of the following nuclei is located in the ventral region of the pons?

a) Motor nucleus of CN V

b) Principal nucleus of V nerve

c) Pontine nuclei

d) Vestibular nuclei

5. Which of the following bundles is composed of decussating fibers of the ventral cochlear nuclei of both sides?

a) Trapezoid body

b) Pontocerebellar fibers

c) Medial longitudinal bundle

d) Trigeminal lemniscus

6. Which of the following nuclei is responsible for parasympathetic fibers to the pterygopalatine and submandibular ganglia?

a) Superior salivary nucleus

b) Inferior salivary nucleus

c) Motor nucleus of CN VII

d) Spinal nucleus of CN V

7. Which of the following bundles carries ascending auditory fibers from cochlear nuclei to the inferior colliculus and thalamus?

a) Medial lemniscus

b) Lateral lemniscus

c) Spinal lemniscus

d) Trigeminal lemniscus

8. Which of the following nuclei is responsible for motor neurons to the superior oblique muscle?

a) Trochlear nerve nucleus

b) Mesencephalic nucleus of CN V

c) Red nucleus

d) Substantia nigra

9. Which of the following bundles connects the vestibular nuclei with the III, IV, VI, spinal XI, and reticular nuclei to coordinate eye movement and audiovisual reflexes of the head and neck?

a) Medial lemniscus

b) Lateral lemniscus

c) Medial longitudinal bundle

d) Tectospinal tract

10. Which of the following structures is located between the tegmentum and crus cerebri?

a) Red nucleus

b) Substantia nigra

c) Mesencephalic nucleus of CN V

d) Pretectal nucleus

11. Which of the following bundles carries opposite fibers for facial pain and temperature?

a) Medial lemniscus

b) Spinal lemniscus

c) Trigeminal lemniscus

d) Lateral lemniscus

12. Which of the following structures is responsible for secreting dopamine?

a) Red nucleus

b) Substantia nigra

c) Mesencephalic nucleus of CN V

d) Pretectal nucleus

13. Which of the following bundles is located ventral to the medial longitudinal bundle?

a) Tectospinal tract

b) Rubrospinal tract

c) Lateral spinothalamic tract

d) Medial lemniscus

14. Which of the following structures is responsible for descending fibers from the red nucleus to the spinal cord?

a) Tectospinal tract

b) Rubrospinal tract

c) Medial longitudinal bundle

d) Lateral spinothalamic tract

15. Which of the following nuclei is involved in the cortico-ponto-cerebellar pathway?

a) Pontine nuclei

b) Vestibular nuclei

c) Cochlear nuclei

d) Red nucleus

16. Which of the following bundles is located dorsal to the spinal lemniscus?

a) Medial lemniscus

b) Lateral lemniscus

c) Trigeminal lemniscus

d) Tectospinal tract

17. Which of the following nuclei is responsible for receiving proprioception from the masticatory, facial, ocular, and lingual muscles?

a) Mesencephalic nucleus of CN V

b) Spinal nucleus of CN V

c) Vestibular nuclei

d) Cochlear nuclei

18. Which of the following bundles is located ventral to the central grey matter?

a) Medial lemniscus

b) Lateral lemniscus

c) Medial longitudinal bundle

d) Tectospinal tract

19. Which of the following nuclei is responsible for general visual reflexes?

    a) Nucleus of the inferior colliculus

    b) Nucleus of the superior colliculus

    c) Pretectal nucleus

    d) Motor nucleus of CN III

20. Which of the following structures is located at the junction of the MB and diencephalon?

    a) Pretectal nucleus

    b) Red nucleus

    c) Substantia nigra

    d) Mesencephalic nucleus of CN V

Answer Key:

1. b)
2. c)
3. b)
4. c)
5. a)
6. a)
7. b)
8. a)
9. c)
10. b)
11. c)
12. b)
13. a)
14. b)
15. a)
16. b)
17. a)
18. c)
19. b)
20. a)

Spinal Cord Anatomy

Instructions: Choose the best answer for each question.

1. What is the approximate length of the spinal cord?
   a) 25 cm
   b) 35 cm
   c) 45 cm
   d) 55 cm

2. Where does the spinal cord extend from?
   a) Foramen magnum to the lower border of L1 vertebra
   b) Upper border of atlas to the lower border of L2 vertebra
   c) Upper border of atlas to the lower border of L1 vertebra
   d) Foramen magnum to the upper border of L2 vertebra

3. What is the tapered lower end of the spinal cord called?
   a) Cauda equina
   b) Conus medullaris
   c) Filum terminale
   d) Linea splendens

4. Which of the following is NOT a feature of the spinal cord's surface?

    a) Anterior median fissure

    b) Posterior median sulcus

    c) Lateral sulcus

    d) Central canal

5. What is the name of the thickened pia matter at the mouth of the anterior median fissure?

    a) Filum terminale

    b) Denticulate ligament

    c) Linea splendens

    d) Subarachnoid space

6. Which spinal segments are associated with the cervical enlargement?

    a) C1-C4

    b) C5-T1

    c) T2-T8

    d) L2-S3

7. What is the name of the space between the dura mater and the periosteum of the vertebral canal?

    a) Subarachnoid space

    b) Epidural space

    c) Subdural space

    d) Perivascular space

8. Which of the following structures is NOT found in the epidural space?
   - a) Loose areolar tissue
   - b) Semiliquid fat
   - c) Internal vertebral venous plexus
   - d) Spinal cord

9. What is the function of the denticulate ligaments?
   - a) To connect the spinal cord to the vertebrae
   - b) To suspend the spinal cord in the subarachnoid space
   - c) To carry blood vessels to the spinal cord
   - d) To form the central canal of the spinal cord

10. What is the H-shaped structure seen in a transverse section of the spinal cord?
    - a) White matter
    - b) Grey matter
    - c) Central canal
    - d) Pia mater

11. Which of the following is NOT a part of the grey matter?
    - a) Anterior horn
    - b) Posterior horn
    - c) Lateral horn
    - d) Posterior white column

12. Which group of motor neurons in the anterior horn innervates the skeletal muscles of the neck and trunk?

    a) Medial group

    b) Central group

    c) Lateral group

    d) Nucleus proprius

13. Which nucleus in the cervical spinal cord innervates the diaphragm?

    a) Accessory nucleus

    b) Phrenic nucleus

    c) Lumbosacral nucleus

    d) Nucleus dorsalis

14. What is the function of the substantia gelatinosa in the posterior horn?

    a) Receives proprioceptive fibers from muscle spindles

    b) Receives afferent fibers concerned with pain, temperature, and touch

    c) Gives rise to preganglionic sympathetic nerve fibers

    d) Gives rise to preganglionic parasympathetic nerve fibers

15. Which of the following tracts is responsible for carrying unconscious proprioceptive information to the cerebellum?

    a) Anterior spinothalamic tract

    b) Lateral spinothalamic tract

    c) Posterior spinocerebellar tract

    d) Anterior spinocerebellar tract

16. Which of the following tracts is NOT an ascending tract?

    a) Fasciculus gracilis

    b) Fasciculus cuneatus

    c) Lateral corticospinal tract

    d) Spino-olivary tract

17. Where do the fibers of the fasciculus gracilis and fasciculus cuneatus terminate?

    a) Thalamus

    b) Cerebellum

    c) Gracile and cuneate nuclei of the medulla oblongata

    d) Anterior horn cells of the spinal cord

18. Which of the following tracts is responsible for carrying pain and temperature information to the thalamus?

    a) Anterior spinothalamic tract

    b) Lateral spinothalamic tract

    c) Posterior spinocerebellar tract

    d) Anterior spinocerebellar tract

19. Which of the following tracts is responsible for carrying motor impulses from the cerebral motor cortex to the spinal cord?

    a) Lateral corticospinal tract

    b) Anterior corticospinal tract

    c) Rubrospinal tract

    d) Tectospinal tract

20. Which of the following tracts is an extrapyramidal tract?

a) Lateral corticospinal tract

b) Anterior corticospinal tract

c) Rubrospinal tract

d) All of the above

21. What is the function of the rubrospinal tract?

a) To control voluntary movements of the limbs

b) To modulate motor tone and flexor reflex activity

c) To carry sensory information from the body to the brain

d) To control balance and coordination

22. What is the name of the single median artery that supplies the anterior 2/3 of the spinal cord?

a) Posterior spinal artery

b) Anterior spinal artery

c) Radicular artery

d) Vertebral artery

23. Which of the following arteries does NOT contribute to the blood supply of the spinal cord?

a) Vertebral artery

b) Posterior intercostal arteries

c) Lumbar arteries

d) Internal carotid artery

24. What is the name of the venous plexus that drains the spinal cord?

a) Internal vertebral venous plexus

b) External vertebral venous plexus

c) Subarachnoid venous plexus

d) Epidural venous plexus

25. Which of the following is NOT a characteristic of spinal shock syndrome?

a) Flaccid paralysis

b) Hypertonia

c) Loss of tendon reflexes

d) Loss of all sensation below the level of lesion

26. What is the most common cause of spinal cord lesion?

a) Vascular disorders

b) Infections

c) Degenerative diseases

d) Trauma

27. What is the clinical manifestation of a complete transaction of the spinal cord?

a) Loss of movement and all sensation below the level of lesion

b) Loss of movement on the same side and loss of sensation on the opposite side

c) Loss of pain and temperature sensation on the same side and loss of touch sensation on the opposite side

d) Loss of proprioception and vibration sense on the same side and loss of pain and temperature sensation on the opposite side

28. Which of the following tracts is interrupted in a hemisection of the spinal cord, resulting in loss of touch sense on the same side?

   a) Lateral corticospinal tract

   b) Posterior column

   c) Anterior spinothalamic tract

   d) Lateral spinothalamic tract

29. Which of the following tracts is interrupted in a hemisection of the spinal cord, resulting in loss of pain and temperature sensation on the opposite side?

   a) Lateral corticospinal tract

   b) Posterior column

   c) Anterior spinothalamic tract

   d) Lateral spinothalamic tract

30. Which of the following is NOT a destination for ascending fibers in the spinal cord?

   a) Cerebral cortex

   b) Cerebellum

   c) Brain stem

   d) Peripheral nerves

Answer Key:

1. c) 45 cm

2. c) Upper border of atlas to the lower border of L1 vertebra

3. b) Conus medullaris

4. d) Central canal

5. c) Linea splendens

6. b) C5-T1

7. b) Epidural space

8. d) Spinal cord

9. b) To suspend the spinal cord in the subarachnoid space

10. b) Grey matter

11. d) Posterior white column

12. a) Medial group

13. b) Phrenic nucleus

14. b) Receives afferent fibers concerned with pain, temperature, and touch

15. c) Posterior spinocerebellar tract

16. c) Lateral corticospinal tract

17. c) Gracile and cuneate nuclei of the medulla oblongata

18. b) Lateral spinothalamic tract

19. a) Lateral corticospinal tract

20. c) Rubrospinal tract

21. b) To modulate motor tone and flexor reflex activity

22. b) Anterior spinal artery

23. d) Internal carotid artery

24. a) Internal vertebral venous plexus

25. b) Hypertonia

26. d) Trauma

27. a) Loss of movement and all sensation below the level of lesion

28. b) Posterior column

30 d) Peripheral nerves

Anterior abdominal wall 1

Instructions: Choose the best answer for each question.

1. Which of the following structures forms the roof of the abdomen?

a) Pelvic floor muscles

b) Lumbar vertebrae

c) Diaphragm

d) Iliopectineal eminence

2. The anterolateral abdominal walls are primarily composed of:

a) Bone and cartilage

b) Muscle and aponeurosis

c) Ligaments and tendons

d) Fascia and connective tissue

3. What is the name of the flexible structure that links the thoracic skeleton and pelvic girdle in the posterior abdominal wall?

a) Iliopectineal eminence

b) Pubic symphysis

c) Linea alba

d) Lumbar part of the vertebral column

4. The pelvic cavity is not oriented in the same vertical plane as the abdominal cavity due to the angle of which structure?

a) Pubic symphysis

b) Iliopectineal eminence

c) Sacrum and attached pelvic bones

d) Thoracic skeleton

5. Which of the following structures passes through the aperture between the inguinal ligament and pelvic bone?

a) Femoral nerve and vessels

b) Spleen

c) Suprarenal glands

d) Urinary bladder

6. Which of the following is NOT a function of the abdominal wall muscles?

a) Supporting and protecting abdominal viscera

b) Assisting in breathing

c) Producing digestive enzymes

d) Assisting in voiding the contents of the bladder, rectum, stomach, and uterus

7. The nine-region organizational description of the abdomen is based on how many horizontal and vertical planes?

a) One horizontal and one vertical

b) Two horizontal and two vertical

c) Three horizontal and three vertical

d) Four horizontal and four vertical

8. What is the name of the superior horizontal plane used in the nine-region pattern?

a) Transumbilical plane

b) Intertubercular plane

c) Subcostal plane

d) Median sagittal plane

9. Which of the following abdominal regions is located inferiorly and laterally?

a) Epigastric region

b) Right flank (lateral or lumbar) region

c) Suprapubic (hypogastric) region

d) Umbilical region

10. Which of the following organs is NOT located in the area under the domes of the diaphragm?

a) Liver

b) Stomach

c) Spleen

d) Urinary bladder

11. The four-quadrant pattern of the abdomen is defined by which two planes?

a) Subcostal and intertubercular

b) Transumbilical and median sagittal

c) Right and left midclavicular

d) Superior and inferior horizontal

12. What is the name of the superficial fatty layer of superficial fascia inferior to the umbilicus?

a) Scarpa's fascia

b) Camper's fascia

c) Colles' fascia

d) Transversalis fascia

13. Which of the following structures is NOT a component of the superficial fascia inferior to the umbilicus?

a) Fat

b) Membranous layer

c) Smooth muscle fibers

d) Parietal peritoneum

14. Which of the following structures is formed by the interdigitation of the aponeuroses of the three flat abdominal muscles?

a) Inguinal ligament

b) Linea alba

c) Arcuate line

d) Conjoint tendon

15. The umbilical ring is a defect in which structure?

a) Linea alba

b) Rectus sheath

c) Transversalis fascia

d) Parietal peritoneum

16. Which of the following muscles is NOT enclosed within the tendinous sheath formed by the aponeuroses of the flat abdominal muscles?

a) External oblique

b) Internal oblique

c) Transversus abdominis

d) Rectus abdominis

17. Which of the following muscles is the most powerful compressor of the abdomen?

a) External oblique

b) Internal oblique

c) Transversus abdominis

d) Rectus abdominis

18. Which of the following muscles is NOT involved in lateral flexion and rotation of the trunk?

a) External oblique

b) Internal oblique

c) Transversus abdominis

d) Rectus abdominis

19. The aponeurosis of which muscle splits into two layers at the lateral border of the rectus abdominis?

a) External oblique

b) Internal oblique

c) Transversus abdominis

d) Pyramidalis

20. The posterior layer of the rectus sheath is deficient above the level of the costal margin because of the attachment of which muscle?

a) External oblique

b) Internal oblique

c) Transversus abdominis

d) Rectus abdominis

Answer Key:

1. c) Diaphragm
2. b) Muscle and aponeurosis
3. d) Lumbar part of the vertebral column
4. c) Sacrum and attached pelvic bones
5. a) Femoral nerve and vessels
6. c) Producing digestive enzymes
7. b) Two horizontal and two vertical
8. c) Subcostal plane
9. b) Right flank (lateral or lumbar) region
10. d) Urinary bladder
11. b) Transumbilical and median sagittal
12. b) Camper's fascia
13. d) Parietal peritoneum
14. b) Linea alba
15. a) Linea alba
16. a) External oblique
17. c) Transversus abdominis
18. c) Transversus abdominis
19. b) Internal oblique
20. c) Transversus abdominis

Anterior abdominal wall part 2

1. Which of the following nerves supplies the skin at the level of the umbilicus?

a) T7

b) T8

c) T9

d) T10

2. Which artery supplies the upper part of the rectus abdominis muscle?

a) Inferior epigastric artery

b) Superficial epigastric artery

c) Superior epigastric artery

d) Deep circumflex iliac artery

3. The thoraco-epigastric vein provides a collateral pathway for venous return during altered blood flow in:

a) Superior vena cava

b) Inferior vena cava

c) Portal vein

d) Both a) and b)

4. Which of the following structures does NOT pass through the inguinal canal in females?

a) Round ligament of the uterus

b) Genital branch of the genitofemoral nerve

c) Ilioinguinal nerve

d) Spermatic cord

5. The conjoint tendon is formed by the combined insertion of which muscles?

a) Internal oblique and transversus abdominis

b) External oblique and transversus abdominis

c) Internal oblique and rectus abdominis

d) External oblique and rectus abdominis

6. Which fascial layer of the spermatic cord is derived from the transversalis fascia?

a) External spermatic fascia

b) Cremasteric fascia

c) Internal spermatic fascia

d) None of the above

7. The pampiniform plexus of veins drains into:

a) Inferior vena cava on both sides

b) Inferior vena cava on the right and left renal vein on the left

c) Superior vena cava on both sides

d) Superior vena cava on the right and left renal vein on the left

8. Which of the following is NOT a factor preventing herniation through the inguinal canal?

a) Oblique path of the inguinal canal

b) Contraction of the cremaster muscle

c) Contraction of the external oblique muscle

d) Contraction of the rectus abdominis muscle

9. An indirect inguinal hernia occurs due to:

a) A weakened posterior wall of the inguinal canal

b) A patent processus vaginalis

c) Increased intra-abdominal pressure

d) Both b) and c)

10. Which of the following statements about direct inguinal hernias is TRUE?

a) They are more common than indirect inguinal hernias

b) They occur lateral to the inferior epigastric vessels

c) They are commonly seen in young women

d) They are acquired due to weakened abdominal musculature

11. Which nerve supplies the cremasteric muscle?

a) Ilioinguinal nerve

b) Genital branch of the genitofemoral nerve

c) Iliohypogastric nerve

d) Lateral cutaneous branch of the thoracoabdominal nerves

12. The superficial inguinal ring is formed by a split in which structure?

a) Internal oblique aponeurosis

b) Transversalis fascia

c) External oblique aponeurosis

d) Conjoint tendon

13. What is the function of the cremaster muscle?

a) To regulate the temperature of the testis

b) To support the spermatic cord

c) To contract the superficial inguinal ring

d) To prevent herniation

14. Which of the following structures is NOT found within the spermatic cord?

a) Testicular artery

b) Vas deferens

c) Round ligament of the uterus

d) Pampiniform plexus of veins

15. The deep inguinal ring is located:

a) Medial to the inferior epigastric artery

b) Lateral to the inferior epigastric artery

c) Superior to the pubic tubercle

d) Inferior to the inguinal ligament

16. What is the name of the triangle bounded by the inferior epigastric vessels, the lateral border of the rectus abdominis, and the inguinal ligament?

a) Hesselbach's triangle

b) Femoral triangle

c) Scarpa's triangle

d) Inguinal triangle

17. Which of the following statements about the inguinal canal in infants is TRUE?

a) The deep and superficial inguinal rings are widely separated

b) The inguinal canal is longer than in adults

c) The inguinal rings are closely aligned

d) The posterior wall of the canal is stronger than in adults

18. Which of the following is a potential complication of an inguinal hernia?

a) Bowel obstruction

b) Strangulation

c) Both a) and b)

d) None of the above

19. The dermatome of T10 nerve supplies the skin of:

a) The xiphoid process

b) The umbilicus

c) The pubic region

d) The scrotum

20. Which of the following structures is NOT a tributary of the external iliac vein?

a) Inferior epigastric vein

b) Deep circumflex iliac vein

c) Superior epigastric vein

d) Both a) and b)

Answer Key:

1. d) T10

2. c) Superior epigastric artery

3. d) Both a) and b)

4. d) Spermatic cord

5. a) Internal oblique and transversus abdominis

6. c) Internal spermatic fascia

7. b) Inferior vena cava on the right and left renal vein on the left

8. d) Contraction of the rectus abdominis muscle

9. b) A patent processus vaginalis

10. d) They are acquired due to weakened abdominal musculature

11. b) Genital branch of the genitofemoral nerve

12. c) External oblique aponeurosis

13. a) To regulate the temperature of the testis

14. c) Round ligament of the uterus

15. b) Lateral to the inferior epigastric artery

16. a) Hesselbach's triangle

17. c) The inguinal rings are closely aligned

18. c) Both a) and b)

19. b) The umbilicus

20. c) Superior epigastric vein

Peritoneum

1. What is the peritoneum?

a) A thin serous membrane lining the abdominal cavity.

b) A thick muscular layer surrounding the abdominal organs.

c) A connective tissue layer supporting the abdominal organs.

d) A fluid-filled space within the abdominal cavity.

2. Which of the following is NOT a function of peritoneal fluid?

a) Lubrication of abdominal organs.

b) Protection against infection.

c) Absorption of nutrients from the digestive tract.

d) Transportation of leukocytes and antibodies.

3. What is the difference between parietal and visceral peritoneum?

a) Parietal peritoneum lines the abdominal wall, while visceral peritoneum covers the organs.

b) Parietal peritoneum is thicker than visceral peritoneum.

c) Parietal peritoneum is responsible for absorption, while visceral peritoneum is responsible for secretion.

d) Parietal peritoneum is found only in males, while visceral peritoneum is found only in females.

4. Which of the following organs is considered extraperitoneal?

a) Stomach

b) Liver

c) Kidney

d) Jejunum

5. What is the term used to describe a peritoneal fold that passes from the stomach and duodenum to adjacent organs?

a) Mesentery

b) Ligament

c) Omentum

d) Peritoneal cavity

6. Which of the following is NOT a type of mesentery?

a) Mesentery of the small intestine

b) Mesoappendix

c) Transverse mesocolon

d) Hepatoduodenal ligament

7. What is the term used to describe the double-layered fold of peritoneum between the posterior body wall and the entire length of the abdominal part of the gut tube?

a) Ventral mesogastrium

b) Dorsal mesogastrium

c) Falciform ligament

d) Lesser omentum

8. During embryonic development, the stomach rotates around its long axis. What is the direction of this rotation?

a) 90 degrees counterclockwise

b) 90 degrees clockwise

c) 180 degrees counterclockwise

d) 180 degrees clockwise

9. What is the name of the small part of the peritoneal cavity posterior to the stomach?

a) Greater sac

b) Lesser sac

c) Epiploic foramen

d) Hepatorenal pouch

10. What is the name of the anterior part of the ventral mesogastrium that extends from the ventral body wall to the liver?

a) Lesser omentum

b) Falciform ligament

c) Coronary ligament

d) Gastrosplenic ligament

11. What is the name of the obliterated umbilical vein after birth?

a) Ligamentum teres hepatis

b) Ligamentum venosum

c) Ductus venosus

d) Hepatoduodenal ligament

12. What is the name of the posterior part of the ventral mesogastrium that extends from the liver to the stomach and duodenum?

a) Falciform ligament

b) Coronary ligament

c) Lesser omentum

d) Greater omentum

13. What structures are found in the free lower edge of the lesser omentum?

a) Portal vein, hepatic artery, and common bile duct

b) Inferior vena cava, caudate lobe of the liver, and first part of the duodenum

c) Stomach fundus, diaphragm, and spleen

d) Transverse colon, jejunum, and ileum

14. What is the name of the surgical gateway to the lesser sac?

a) Epiploic foramen

b) Hepatorenal pouch

c) Right paracolic gutter

d) Left paracolic gutter

15. What is the name of the most cranial part of the dorsal mesogastrium that extends between the stomach fundus and the diaphragm?

a) Gastrosplenic ligament

b) Lienorenal ligament

c) Gastrophrenic ligament

d) Gastrocolic ligament

16. What is the name of the largest part of the greater omentum that connects the lowermost part of the greater curvature of the stomach to the transverse colon?

a) Gastrosplenic ligament

b) Lienorenal ligament

c) Gastrophrenic ligament

d) Gastrocolic ligament

17. What is the name of the peritoneal fold that hangs the left colic flexure from the diaphragm?

a) Phrenicocolic ligament

b) Transverse mesocolon

c) Sigmoid mesocolon

d) Mesentery of the small intestine

18. What is the name of the groove-like depression of the parietal peritoneum of the posterior abdominal wall that lies to the right of the ascending colon?

a) Right paracolic gutter

b) Left paracolic gutter

c) Hepatorenal pouch

d) Epiploic foramen

19. What is the name of the most redundant part of the infracolic compartment?

a) Rectovesical pouch

b) Recto-uterine pouch (of Douglas)

c) Hepatorenal pouch

d) Right sub-phrenic space

20. Which of the following structures is NOT found in the supracolic compartment?

a) Stomach

b) Liver

c) Spleen

d) Small intestine

Answers

1. a)
2. c)
3. a)
4. c)
5. c)
6. d)
7. b)
8. b)
9. b)
10. b)
11. a)
12. c)
13. a)
14. a)
15. c)
16. d)
17. a)
18. a)
19. b)
20. d)

stomach and duedenom

1. Which of the following is NOT a function of the stomach?

a) Absorption of nutrients

b) Storage of food

c) Mixing food with gastric secretions

d) Controlling the rate of chyme discharge

2. What is the approximate capacity of the stomach?

a) 500 ml

b) 1000 ml

c) 1500 ml

d) 2000 ml

3. The cardiac orifice of the stomach is located:

a) 10 cm posterior to the 7th right costal cartilage

b) 10 cm posterior to the 7th left costal cartilage

c) 2-3 cm to the right of the median plane

d) At the level of the 10th thoracic vertebra

4. Which structure connects the lesser curvature of the stomach to the liver?

a) Greater omentum

b) Lesser omentum

c) Gastrosplenic omentum

d) Mesentery

5. The fundus of the stomach is in contact with which structure?

a) Right lobe of the liver

b) Left lobe of the liver

c) Left dome of the diaphragm

d) Spleen

6. Which part of the stomach extends from the incisura angularis to the pylorus?

a) Cardia

b) Fundus

c) Body

d) Pyloric antrum

7. The pyloric sphincter is a thick muscular wall surrounding the:

a) Cardiac orifice

b) Pyloric orifice

c) Duodenojejunal flexure

d) Ampulla of Vater

8. Which of the following structures is NOT part of the stomach bed?

a) Spleen

b) Left kidney

c) Right suprarenal gland

d) Transverse colon

9. Which artery supplies the upper right part of the stomach?

a) Left gastric artery

b) Right gastric artery

c) Short gastric arteries

d) Left gastroepiploic artery

10. The short gastric arteries arise from which vessel?

a) Celiac trunk

b) Splenic artery

c) Common hepatic artery

d) Gastroduodenal artery

11. Which vein drains into the superior mesenteric vein?

a) Left gastric vein

b) Right gastric vein

c) Short gastric vein

d) Right gastroepiploic vein

12. Lymph from the stomach ultimately drains to which lymph nodes?

a) Hepatic nodes

b) Splenic nodes

c) Celiac nodes

d) Gastroduodenal nodes

13. Which nerve supplies the anterior surface of the stomach?

a) Anterior vagal trunk

b) Posterior vagal trunk

c) Celiac sympathetic plexus

d) Both a) and c)

14. The sympathetic nerve supply to the stomach originates from which spinal cord segments?

a) T4-T6

b) T6-T9

c) T8-T11

d) T10-T12

15. The folds in the mucous membrane of the stomach are called:

a) Plica circulares

b) Rugae

c) Villi

d) Crypts

16. The duodenum is divided into how many parts?

a) 2

b) 3

c) 4

d) 5

17. Where do the bile duct and the main pancreatic duct unite?

a) Duodenal cap

b) Minor duodenal papilla

c) Major duodenal papilla

d) Duodenojejunal flexure

18. The ligament of Treitz holds which structure in position?

a) Duodenal cap

b) Duodenojejunal flexure

c) Pyloric sphincter

d) Ampulla of Vater

19. Which of the following is a potential complication of pylorospasm in infants?

a) Constipation

b) Vomiting

c) Diarrhea

d) Weight gain

20. Congenital hypertrophic pyloric stenosis is characterized by:

a) Thickening of the smooth muscle in the pylorus

b) Narrowing of the pyloric canal

c) Dilatation of the stomach

d) All of the above

Answer Key:

1. a) Absorption of nutrients
2. c) 1500 ml
3. b) 10 cm posterior to the 7th left costal cartilage
4. b) Lesser omentum
5. c) Left dome of the diaphragm
6. d) Pyloric antrum
7. b) Pyloric orifice
8. c) Right suprarenal gland
9. a) Left gastric artery
10. b) Splenic artery
11. d) Right gastroepiploic vein
12. c) Celiac nodes
13. a) Anterior vagal trunk
14. b) T6-T9
15. b) Rugae
16. c) 4
17. c) Major duodenal papilla
18. b) Duodenojejunal flexure
19. b) Vomiting
20. d) All of the above

small and large intestine

1. What is the approximate length of the jejunum and ileum combined?

a) 3 meters

b) 4 meters

c) 5 meters

d) 6 meters

2. Which of the following features distinguishes the jejunum from the ileum?

a) The jejunum is shorter than the ileum.

b) The jejunum has smaller plica circulares than the ileum.

c) The jejunal mesentery is attached to the posterior abdominal wall below and to the right of the aorta.

d) The jejunal mesenteric vessels form three or four arcades.

3. Peyer's patches are present in the mucous membrane of the:

a) Jejunum

b) Upper ileum

c) Lower ileum

d) Duodenum

4. The root of the mesentery is approximately how long?

a) 5 cm

b) 10 cm

c) 15 cm

d) 20 cm

5. Which structure does the root of the mesentery NOT cross?

a) Horizontal part of the duodenum

b) Aorta

c) Inferior vena cava

d) Left testicular or ovarian vessels

6. What is the approximate length of the large intestine?

a) 0.5 meter

b) 1 meter

c) 1.5 meter

d) 2 meters

7. The ileocecal orifice is located at the junction of the cecum with the:

a) Ascending colon

b) Transverse colon

c) Descending colon

d) Sigmoid colon

8. The taeniae coli converge at the base of the:

a) Cecum

b) Appendix

c) Ascending colon

d) Transverse colon

9. The appendix is commonly found:

a) In front of the cecum

b) Behind the cecum

c) In the left iliac fossa

d) In the pelvis

10. The McBurney point is located at the junction of the:

a) Lateral 1/3 with medial 2/3 of a line joining the anterior superior iliac spine and the umbilicus

b) Medial 1/3 with lateral 2/3 of a line joining the anterior superior iliac spine and the umbilicus

c) Lateral 1/3 with medial 2/3 of a line joining the umbilicus and the pubic symphysis

d) Medial 1/3 with lateral 2/3 of a line joining the umbilicus and the pubic symphysis

11. Which artery supplies the appendix?

a) Anterior cecal artery

b) Posterior cecal artery

c) Appendicular artery

d) Ileocolic artery

12. The ascending colon is bound to the posterior abdominal wall by:

a) The greater omentum

b) The transverse mesocolon

c) The mesentery of the small intestine

d) Peritoneum

13. The left colic flexure is higher than the right colic flexure due to:

a) The attachment of the transverse mesocolon

b) The phrenicocolic ligament

c) The greater omentum

d) The mesentery of the small intestine

14. Which artery supplies the proximal 2/3 of the transverse colon?

a) Left colic artery

b) Middle colic artery

c) Right colic artery

d) Ileocolic artery

15. The descending colon is located:

a) Anterior to the external iliac vessels

b) Posterior to the external iliac vessels

c) Lateral to the external iliac vessels

d) Medial to the external iliac vessels

16. Which of the following is NOT an external difference between the small and large intestine?

a) The small intestine is mobile, while the ascending and descending colon are fixed.

b) The small intestine has a mesentery, while the large intestine does not.

c) The small intestine has a continuous layer of longitudinal muscle, while the large intestine has taeniae coli.

d) The small intestine has no appendices epiploicae, while the large intestine does.

17. Which of the following is NOT an internal difference between the small and large intestine?

a) The small intestine has plica circulares, while the large intestine does not.

b) The small intestine has villi, while the large intestine does not.

c) The small intestine has Peyer's patches, while the large intestine does not.

d) The small intestine has a thicker wall than the large intestine.

18. What is the most common cause of acute appendicitis in young people?

a) Obstruction of the appendix by hardened intestinal contents

b) Hyperplasia of lymphatic follicles in the appendix

c) Thrombosis of the appendicular artery

d) Perforation of the appendix

19. What is the typical presentation of visceral pain in appendicitis?

a) Precise, severe, and localized pain

b) Vague referred pain in the region of the umbilicus

c) Sharp, stabbing pain in the right iliac fossa

d) Constant, dull ache in the lower abdomen

20. Which of the following factors contributes to the appendix's predilection to infection?

a) It is a long, narrow, blind-ended tube.

b) It has a large amount of lymphoid tissue in its wall.

c) The lumen has a tendency to become obstructed.

d) All of the above

Answer Key:

1. d) 6 meters

2. c) The jejunal mesentery is attached to the posterior abdominal wall below and to the right of the aorta.

3. c) Lower ileum

4. c) 15 cm

5. d) Left testicular or ovarian vessels

6. c) 1.5 meter

7. a) Ascending colon

8. b) Appendix

9. b) Behind the cecum

10. a) Lateral 1/3 with medial 2/3 of a line joining the anterior superior iliac spine and the umbilicus

11. c) Appendicular artery

12. d) Peritoneum

13. b) The phrenicocolic ligament

14. b) Middle colic artery

15. a) Anterior to the external iliac vessels

16. b) The small intestine has a mesentery, while the large intestine does not.

17. d) The small intestine has a thicker wall than the large intestine.

18. b) Hyperplasia of lymphatic follicles in the appendix

19. b) Vague referred pain in the region of the umbilicus

20. d) All of the above

Liver and Gallbladder

Instructions: Choose the best answer for each question.

1. What is the largest visceral organ in the human body?

a) Stomach

b) Liver

c) Spleen

d) Kidney

2. Which of the following is NOT a function of the liver?

a) Carbohydrate metabolism

b) Production of bile

c) Storage of vitamins and minerals

d) Production of red blood cells in adults

3. What is the name of the fibrous capsule that covers the surface of the liver?

a) Glisson's capsule

b) Peritoneum

c) Falciform ligament

d) Coronary ligament

4. Which structure divides the liver into right and left lobes?

a) Falciform ligament

b) Porta hepatis

c) Coronary ligament

d) Hepatoduodenal ligament

5. What is the name of the peritoneal recess located between the liver and the right kidney?

a) Subphrenic recess

b) Hepatorenal recess

c) Omental foramen

d) Lesser sac

6. Which of the following structures is NOT found in the porta hepatis?

a) Hepatic artery proper

b) Portal vein

c) Inferior vena cava

d) Hepatic ducts

7. Which lobe of the liver is functionally related to the left lobe?

a) Right lobe

b) Caudate lobe

c) Quadrate lobe

d) None of the above

8. What is the name of the imaginary line that divides the liver into halves of approximately equal size?

a) Falciform ligament

b) Principal plane

c) Middle hepatic vein

d) Porta hepatis

9. What percentage of the liver's blood volume is supplied by the portal vein?

a) 20-25%

b) 50-60%

c) 75-80%

d) 90-95%

10. Which of the following is NOT a symptom of liver cirrhosis?

a) Ascites

b) Splenomegaly

c) Jaundice

d) Increased appetite

11. What is the name of the sac that stores and concentrates bile?

a) Gallbladder

b) Cystic duct

c) Common bile duct

d) Hepatic duct

12. Which part of the gallbladder is in contact with the anterior abdominal wall?

a) Fundus

b) Body

c) Neck

d) Infundibulum

13. What is the name of the artery that supplies the gallbladder?

a) Right hepatic artery

b) Left hepatic artery

c) Cystic artery

d) Gastroduodenal artery

14. Which of the following structures is NOT part of the extrahepatic biliary system?

a) Common hepatic duct

b) Cystic duct

c) Common bile duct

d) Hepatic sinusoids

15. What is the name of the valve located at the junction of the cystic duct and the common hepatic duct?

a) Spiral valve

b) Heister's valve

c) Sphincter of Oddi

d) None of the above

16. Where does the common bile duct enter the duodenum?

a) Major duodenal papilla

b) Minor duodenal papilla

c) Omental foramen

d) Porta hepatis

17. Which of the following is a potential complication of liver cirrhosis?

a) Esophageal varices

b) Portal hypertension

c) Ascites

d) All of the above

18. What is the name of the condition characterized by inflammation of the gallbladder?

a) Cholecystitis

b) Cirrhosis

c) Hepatitis

d) Cholelithiasis

19. Which of the following is a risk factor for gallstones?

a) Obesity

b) High cholesterol diet

c) Female gender

d) All of the above

20. What is the name of the procedure used to remove the gallbladder?

a) Cholecystectomy

b) Hepatectomy

c) Appendectomy

d) Colectomy

Answers:

1. b) Liver
2. d) Production of red blood cells in adults
3. a) Glisson's capsule
4. a) Falciform ligament
5. b) Hepatorenal recess
6. c) Inferior vena cava
7. c) Quadrate lobe
8. b) Principal plane
9. c) 75-80%
10. d) Increased appetite
11. a) Gallbladder
12. a) Fundus
13. c) Cystic artery
14. d) Hepatic sinusoids
15. b) Heister's valve
16. a) Major duodenal papilla
17. d) All of the above
18. a) Cholecystitis
19. d) All of the above
20. a) Cholecystectomy

Pancreas & Spleen MCQs:

Instructions: Choose the best answer for each question.

1. Where does the pancreas lie in relation to the stomach?

a) Anterior

b) Posterior

c) Lateral

d) Superior

2. Which part of the pancreas is NOT retroperitoneal?

a) Head

b) Neck

c) Body

d) Tail

3. What structure lies within the C-shaped concavity of the duodenum?

a) Head of the pancreas

b) Tail of the pancreas

c) Spleen

d) Liver

4. What is the name of the projection from the lower part of the pancreatic head?

a) Neck

b) Body

c) Tail

d) Uncinate process

5. What is formed by the joining of the superior mesenteric and splenic veins?

a) Portal vein

b) Inferior vena cava

c) Aorta

d) Celiac trunk

6. Where does the pancreatic duct begin?

a) Head of the pancreas

b) Neck of the pancreas

c) Body of the pancreas

d) Tail of the pancreas

7. What is the name of the structure formed by the joining of the pancreatic duct and bile duct?

a) Hepatopancreatic ampulla

b) Sphincter of Oddi

c) Major duodenal papilla

d) Minor duodenal papilla

8. What is the function of the sphincter of Oddi?

a) Regulates the flow of bile and pancreatic juice into the duodenum

b) Secretes digestive enzymes

c) Produces insulin and glucagon

d) Filters old or abnormal red blood cells

9. What is the name of the duct that empties into the duodenum just above the major duodenal papilla?

a) Main pancreatic duct

b) Accessory pancreatic duct

c) Bile duct

d) Hepatic duct

10. What is the embryological origin of the pancreas?

a) Dorsal and ventral buds from the foregut

b) Mesoderm

c) Endoderm

d) Ectoderm

11. Which artery supplies the head of the pancreas?

a) Splenic artery

b) Gastroduodenal artery

c) Superior mesenteric artery

d) Inferior mesenteric artery

12. What is the condition that occurs when the ventral bud of the pancreas splits and encircles the duodenum?

a) Pancreatic cancer

b) Splenomegaly

c) Annular pancreas

d) Polyhydramnios

13. What is the "silent killer" often referred to in relation to pancreatic cancer?

a) The lack of symptoms in the early stages

b) The rapid spread of the cancer

c) The high mortality rate

d) All of the above

14. What is the most common site for malignant tumors of the pancreas?

a) Head and neck

b) Body

c) Tail

d) Uncinate process

15. What is the function of the spleen?

a) Produces digestive enzymes

b) Secretes insulin and glucagon

c) Filters old or abnormal red blood cells

d) Stores bile

16. Where is the spleen located?

a) Right hypochondriac region

b) Left hypochondriac region

c) Epigastric region

d) Hypogastric region

17. What ligament connects the spleen to the kidney?

a) Gastrosplenic ligament

b) Splenorenal ligament

c) Splenic ligament

d) Phrenicosplenic ligament

18. What is the entry point for the splenic vessels into the spleen?

a) Hilum

b) Capsule

c) Trabeculae

d) Red pulp

19. What is the most frequently injured abdominal organ?

a) Liver

b) Spleen

c) Pancreas

d) Kidney

20. What is the term for small nodules of splenic tissue that form separately from the main spleen?

a) Splenic cysts

b) Accessory spleens

c) Splenic nodules

d) Splenic tumors

Answers:

1. b) Posterior
2. d) Tail
3. a) Head of the pancreas
4. d) Uncinate process
5. a) Portal vein
6. d) Tail of the pancreas
7. a) Hepatopancreatic ampulla
8. a) Regulates the flow of bile and pancreatic juice into the duodenum
9. b) Accessory pancreatic duct
10. a) Dorsal and ventral buds from the foregut
11. b) Gastroduodenal artery
12. c) Annular pancreas
13. d) All of the above
14. a) Head and neck
15. c) Filters old or abnormal red blood cells
16. b) Left hypochondriac region
17. b) Splenorenal ligament
18. a) Hilum
19. b) Spleen
20. b) Accessory spleens

blood supply of GIT

1. Which artery supplies the lower 1/3 of the esophagus?

a) Superior mesenteric artery

b) Celiac artery

c) Inferior mesenteric artery

d) Gastroduodenal artery

2. The celiac trunk arises from the aorta at the level of which vertebra?

a) Eleventh thoracic

b) Twelfth thoracic

c) First lumbar

d) Second lumbar

3. Which artery supplies the middle of the second part of the duodenum?

a) Left gastric artery

b) Splenic artery

c) Common hepatic artery

d) Superior mesenteric artery

4. Which of the following is NOT a branch of the celiac trunk?

a) Right gastric artery

b) Left gastric artery

c) Splenic artery

d) Common hepatic artery

5. The right gastroepiploic artery arises from which artery?

a) Common hepatic artery

b) Proper hepatic artery

c) Gastroduodenal artery

d) Superior pancreaticoduodenal artery

6. Which artery supplies the proximal 2/3 of the transverse colon?

a) Left colic artery

b) Middle colic artery

c) Right colic artery

d) Ileocolic artery

7. The appendicular artery is a branch of which artery?

a) Anterior cecal artery

b) Posterior cecal artery

c) Ileocolic artery

d) Right colic artery

8. Which artery supplies the distal third of the transverse colon?

a) Middle colic artery

b) Left colic artery

c) Inferior mesenteric artery

d) Superior mesenteric artery

9. The superior rectal artery is a continuation of which artery?

a) Inferior mesenteric artery

b) Left colic artery

c) Sigmoid artery

d) Middle rectal artery

10. The marginal artery is formed by the anastomosis of which arteries?

a) Left colic, middle colic, and right colic arteries

b) Ileocolic, right colic, and middle colic arteries

c) Ileocolic, right colic, and left colic arteries

d) Ileocolic, sigmoid, and superior rectal arteries

11. Which vein drains the blood from the greater part of the gastrointestinal tract?

a) Inferior vena cava

b) Superior vena cava

c) Portal vein

d) Splenic vein

12. The portal vein is formed by the union of which two veins?

a) Superior mesenteric vein and inferior mesenteric vein

b) Superior mesenteric vein and splenic vein

c) Splenic vein and left gastric vein

d) Splenic vein and right gastric vein

13. Which of the following is NOT a tributary of the portal vein?

a) Superior mesenteric vein

b) Splenic vein

c) Inferior mesenteric vein

d) Left gastric vein

14. The inferior mesenteric vein drains into which vein?

a) Superior mesenteric vein

b) Portal vein

c) Splenic vein

d) Left gastric vein

15. Which vein drains the blood from the gall bladder?

a) Cystic vein

b) Right gastric vein

c) Left gastric vein

d) Superior pancreaticoduodenal vein

16. What is the name given to the enlarged veins at the gastroesophageal junction in portal hypertension?

a) Caput medusae

b) Hemorrhoids

c) Esophageal varices

d) Portal vein varices

17. Which of the following is NOT a site of portosystemic anastomoses?

a) Lower third of the esophagus

b) Halfway down the anal canal

c) At the umbilicus

d) At the junction of the superior and inferior mesenteric veins

18. Which of the following conditions is most commonly associated with the development of esophageal varices?

a) Portal hypertension

b) Gastric ulcer

c) Crohn's disease

d) Appendicitis

19. What is the clinical manifestation of distended superficial epigastric veins radiating from the umbilicus?

a) Caput medusae

b) Hemorrhoids

c) Esophageal varices

d) Portal vein varices

20. Which of the following statements regarding esophageal varices is TRUE?

a) They are always asymptomatic.

b) They are a common cause of upper gastrointestinal bleeding.

c) They are easily treated with medication.

d) They are a benign condition that does not require treatment.

Answer Key:

1. b) Celiac artery
2. b) Twelfth thoracic
3. d) Superior mesenteric artery
4. a) Right gastric artery
5. c) Gastroduodenal artery
6. b) Middle colic artery
7. c) Ileocolic artery
8. c) Inferior mesenteric artery
9. a) Inferior mesenteric artery
10. c) Ileocolic, right colic, and left colic arteries
11. c) Portal vein
12. b) Superior mesenteric vein and splenic vein
13. c) Inferior mesenteric vein
14. c) Splenic vein
15. a) Cystic vein
16. c) Esophageal varices
17. d) At the junction of the superior and inferior mesenteric veins
18. a) Portal hypertension
19. a) Caput medusae
20. b) They are a common cause of upper gastrointestinal bleeding.

posterior abdominal wall

1. Which of the following structures forms the floor of the superior lumbar triangle?

a) Internal oblique muscle

b) Transversalis fascia

c) Quadratus lumborum muscle

d) Latissimus dorsi muscle

2. The psoas fascia is continuous with which of the following structures inferior to the iliac crest?

a) Thoracolumbar fascia

b) Iliac fascia

c) Quadratus lumborum fascia

d) Internal oblique fascia

3. Which layer of the thoracolumbar fascia covers the anterior surface of the quadratus lumborum muscle?

a) Posterior layer

b) Middle layer

c) Anterior layer

d) All of the above

4. The iliolumbar ligament is formed by the thickened lower borders of which layers of the thoracolumbar fascia?

a) Posterior and middle layers

b) Middle and anterior layers

c) Anterior and posterior layers

d) All three layers

5. The abdominal aorta ends at the level of which vertebra?

a) T12

b) L1

c) L3

d) L4

6. Which of the following structures does NOT lie anteriorly to the abdominal aorta?

a) Pancreas

b) Splenic vein

c) Left renal vein

d) Right crus of the diaphragm

7. Which paired visceral branch of the abdominal aorta arises at the level of the disc between L1 and L2 vertebrae?

a) Middle suprarenal artery

b) Renal artery

c) Gonadal artery

d) Inferior phrenic artery

8. The gonadal artery crosses which of the following structures to reach the ovary?

a) Proximal part of the external iliac artery

b) Distal part of the external iliac artery

c) Internal iliac artery

d) Common iliac artery

9. Which of the following arteries does NOT contribute to the segmental branches supplying the spinal cord?

a) Inferior phrenic arteries

b) Lumbar arteries

c) Posterior intercostal arteries

d) Median sacral artery

10. The median sacral artery arises from the abdominal aorta just above which structure?

a) Aortic hiatus

b) Aortic bifurcation

c) Renal arteries

d) Common iliac arteries

11. Lymph from the lower limb and perineum passes through which lymph nodes before reaching the pre-aortic nodes?

a) Internal iliac nodes

b) External iliac nodes

c) Common iliac nodes

d) Both b and c

12. Which of the following structures does NOT drain into the lumbar lymph nodes?

a) Body wall

b) Kidneys

c) Suprarenal glands

d) Spleen

13. The cisterna chyli marks the beginning of which structure?

a) Thoracic duct

b) Inferior vena cava

c) Azygos vein

d) Portal vein

14. The inferior vena cava begins anterior to which vertebra?

a) L3

b) L4

c) L5

d) T8

15. Which of the following structures does NOT cross the anterior surface of the inferior vena cava?

a) Right gonadal artery

b) Third part of the duodenum

c) Portal vein

d) Left renal vein

16. Which of the following veins is NOT a tributary of the inferior vena cava?

a) Common iliac veins

b) Lumbar veins

c) Hepatic veins

d) Splenic vein

17. The subcostal nerve enters the abdomen by passing behind which structure?

a) Lateral arcuate ligament

b) Medial arcuate ligament

c) Psoas major muscle

d) Quadratus lumborum muscle

18. Which of the following nerves does NOT arise from the lateral border of the psoas major muscle?

a) Iliohypogastric nerve

b) Ilioinguinal nerve

c) Lateral cutaneous nerve of the thigh

d) Obturator nerve

19. The genitofemoral nerve divides into genital and femoral branches proximal to which structure?

a) Deep inguinal ring

b) Superficial inguinal ring

c) Inguinal ligament

d) Femoral sheath

20. Which of the following structures does NOT contribute to the abdominal prevertebral plexus?

a) Lumbar splanchnic nerves

b) Greater and lesser splanchnic nerves

c) Posterior vagal trunk

d) Pelvic splanchnic nerves

Answers:

1. b) Transversalis fascia
2. b) Iliac fascia
3. c) Anterior layer
4. b) Middle and anterior layers
5. d) L4
6. d) Right crus of the diaphragm
7. b) Renal artery
8. a) Proximal part of the external iliac artery
9. d) Median sacral artery
10. b) Aortic bifurcation
11. d) Both b and c
12. d) Spleen
13. a) Thoracic duct
14. c) L5
15. d) Left renal vein
16. d) Splenic vein
17. a) Lateral arcuate ligament
18. d) Obturator nerve
19. c) Inguinal ligament
20. d) Pelvic splanchnic nerves

kidney and adrenal gland

1. Which of the following structures is NOT located within the renal sinus?

a) Renal pelvis

b) Calyces

c) Renal pyramids

d) Blood vessels

2. The renal fascia encloses which of the following structures?

a) Kidney and suprarenal gland

b) Kidney and ureter

c) Suprarenal gland and ureter

d) Kidney, suprarenal gland, and ureter

3. Which of the following structures separates the right kidney from the head of the pancreas, bile duct, and second part of the duodenum?

a) Inferior vena cava

b) Right renal vein

c) Right renal artery

d) Both a and b

4. The arcuate arteries arise from which of the following arteries?

a) Segmental arteries

b) Interlobar arteries

c) Interlobular arteries

d) Afferent glomerular arteries

5. Which of the following veins does NOT drain into the left renal vein?

a) Left suprarenal vein

b) Left gonadal vein

c) Left inferior phrenic vein

d) Left common iliac vein

6. Which of the following nerves does NOT contribute to the nerve supply of the kidneys?

a) Lowest splanchnic nerve

b) Celiac ganglion

c) Renal ganglion

d) Pelvic splanchnic nerves

7. Which of the following structures lies anterior to the right suprarenal gland?

a) Left lobe of the liver

b) Right lobe of the liver

c) Spleen

d) Pancreas

8. The inferior suprarenal artery arises from which of the following arteries?

a) Inferior phrenic artery

b) Abdominal aorta

c) Renal artery

d) Testicular or ovarian artery

9. Which of the following structures is NOT a constriction point along the ureter?

a) Pelviureteric junction

b) Pelvic brim

c) Urinary bladder

d) Renal pelvis

10. The ureter enters the pelvis by crossing which of the following structures?

a) Bifurcation of the common iliac artery

b) Sacroiliac joint

c) Ischial spine

d) All of the above

11. Which of the following structures does NOT lie anterior to the right ureter?

a) Second part of the duodenum

b) Right gonadal vessels

c) Right colic vessels

d) Right common iliac artery

12. The middle part of the ureter receives its arterial supply from which of the following arteries?

a) Renal artery

b) Testicular or ovarian artery

c) Superior vesical artery

d) Inferior vesical artery

13. Which of the following spinal cord segments receives afferent nerves from the renal pelvis and ureter?

a) T10 and T11

b) T11 and T12

c) L1 and L2

d) Both b and c

14. The agonizing colicky pain of renal colic is often referred to which of the following areas?

a) Flank, loin, and groin

b) Testis or tip of the penis in males, labium majus in females

c) Front of the thigh

d) All of the above

15. Which of the following nerves is responsible for the referral of ureteral pain to the front of the thigh?

a) Genitofemoral nerve

b) Iliohypogastric nerve

c) Ilioinguinal nerve

d) Lateral cutaneous nerve of the thigh

16. Which of the following is NOT a common site for ureteric stones to be arrested?

a) Pelviureteral junction

b) Pelvic brim

c) Urinary bladder

d) Renal papilla

17. The right kidney is slightly lower than the left kidney due to the presence of which organ?

a) Stomach

b) Spleen

c) Liver

d) Pancreas

18. The fibrous capsule of the kidney is closely applied to which surface of the kidney?

a) Anterior surface

b) Posterior surface

c) Lateral border

d) Medial border

19. The renal pyramids have their bases directed towards which structure?

a) Renal cortex

b) Renal medulla

c) Renal sinus

d) Renal pelvis

20. The striations extending from the bases of the renal pyramids into the cortex are known as:

a) Renal columns

b) Medullary rays

c) Renal papillae

d) Minor calyces

## Answers:

1. c) Renal pyramids
2. a) Kidney and suprarenal gland
3. d) Both a and b
4. b) Interlobar arteries
5. d) Left common iliac vein
6. d) Pelvic splanchnic nerves
7. b) Right lobe of the liver
8. c) Renal artery
9. d) Renal papilla
10. d) All of the above
11. d) Right common iliac artery
12. b) Testicular or ovarian artery
13. d) Both b and c
14. d) All of the above
15. a) Genitofemoral nerve
16. d) Renal papilla
17. c) Liver
18. a) Anterior surface
19. a) Renal cortex
20. b) Medullary rayskidney and adrenal gland

Pelvic bones , joints , muscles

Instructions: Choose the best answer for each question.

1. Which of the following structures does NOT form part of the pelvic brim?

a) Arcuate lines

b) Sacral promontory

c) Ischial spine

d) Pubic symphysis

2. What is the name of the Y-shaped epiphyseal cartilage found in the hip bone of a child?

a) Acetabulum

b) Obturator foramen

c) Iliac crest

d) Ischial tuberosity

3. Which muscle originates from the anterior inferior iliac spine?

a) Gluteus maximus

b) Gluteus medius

c) Rectus femoris

d) Tensor fascia lata

4. What is the name of the landmark used for bone biopsy on the iliac crest?

a) Anterior superior iliac spine

b) Posterior superior iliac spine

c) Iliac tuberosity

d) Pubic tubercle

5. Which of the following muscles does NOT attach to the ischial tuberosity?

a) Hamstring muscles

b) Sacrotuberous ligament

c) Obturator internus

d) Gluteus maximus

6. What is the name of the conical projection on the ischium that separates the greater and lesser sciatic notches?

a) Ischial spine

b) Ischial tuberosity

c) Pubic tubercle

d) Sacral promontory

7. Which muscle does NOT attach to the pelvic surface of the ischium?

a) Obturator internus

b) Levator ani

c) Coccygeus

d) Piriformis

8. What is the name of the ridge on the superior ramus of the pubis that gives attachment to part of the inguinal ligament?

a) Pubic crest

b) Pectineal line

c) Iliac crest

d) Ischial spine

9. Which of the following structures is NOT found in the sacral canal?

a) Cauda equina

b) Cerebrospinal fluid

c) External vertebral venous plexus

d) Femoral nerve

10. What is the name of the strong ligament that attaches the ischial tuberosity to the coccyx, lateral crest of the sacrum, and posterior iliac spines?

a) Sacrospinous ligament

b) Sacrotuberous ligament

c) Iliolumbar ligament

d) Interosseous sacroiliac ligament

11. Which of the following statements is TRUE regarding the sacroiliac joint?

a) It is a freely movable joint.

b) It is stabilized primarily by muscles.

c) It may become partly fibrous with age.

d) It is the primary site for weight transmission from the lower limbs.

12. What is the name of the procedure that involves injecting anesthetic solutions into the sacral canal to block the sacral nerve roots?

a) Epidural block

b) Pudendal nerve block

c) Spinal block

d) Caudal epidural block

13. Which of the following statements is FALSE regarding the symphysis pubis?

a) It is a secondary cartilaginous joint.

b) It is united by a fibrocartilaginous disc.

c) It allows for significant movement.

d) It may be split during childbirth to enlarge the birth canal.

14. What is the name of the space below the pelvic brim that forms the birth canal?

a) Greater pelvis

b) Lesser pelvis

c) Pelvic cavity

d) Pelvic outlet

15. Which of the following statements is TRUE regarding sex differences in the pelvis?

a) The male pelvis is wider and shallower than the female pelvis.

b) The female pelvis has a heart-shaped brim.

c) The male pelvis has a larger subpubic angle.

d) The female pelvis has a wider outlet.

16. What is the name of the muscle that originates from the upper two-thirds of the iliac fossa and inserts on the lesser trochanter of the femur?

a) Piriformis

b) Obturator internus

c) Iliacus

d) Gluteus maximus

17. Which muscle passes laterally through the greater sciatic notch to attach to the greater trochanter of the femur?

a) Piriformis

b) Obturator internus

c) Iliacus

d) Gluteus medius

18. What is the name of the fibromuscular diaphragm that separates the pelvic cavity from the perineum?

a) Pelvic floor

b) Pelvic fascia

c) Perineal body

d) Sacrotuberous ligament

19. Which muscle forms the gutter-like arrangement that rotates the fetal head during birth?

a) Coccygeus

b) Levator ani

c) Piriformis

d) Obturator internus

20. What is the main function of the pelvic floor muscles?

a) To rotate the femur laterally.

b) To provide support for the pelvic viscera.

c) To flex the trunk on the thigh.

d) To extend the hip joint.

Answers:

1. c) Ischial spine
2. a) Acetabulum
3. c) Rectus femoris
4. b) Posterior superior iliac spine
5. c) Obturator internus
6. a) Ischial spine
7. d) Piriformis
8. b) Pectineal line
9. d) Femoral nerve
10. b) Sacrotuberous ligament
11. c) It may become partly fibrous with age.
12. d) Caudal epidural block
13. c) It allows for significant movement.
14. b) Lesser pelvis
15. d) The female pelvis has a wider outlet.
16. c) Iliacus
17. a) Piriformis
18. a) Pelvic floor
19. b) Levator ani
20. b) To provide support for the pelvic viscera.

Lec 2 : pelvic organs

instructions: Choose the best answer for each question.

1. Which of the following structures is NOT related to the rectum posteriorly?

a) Superior rectal artery

b) 3rd, 4th, and 5th sacral nerves

c) Sympathetic plexus

d) Internal iliac artery

2. What is the name of the peritoneal pouch located between the rectum and the uterus in females?

a) Rectovesical pouch

b) Rectouterine pouch (pouch of Douglas)

c) Peritoneal cavity

d) Pelvic cavity

3. Which of the following structures is NOT located anterior to the rectum in males?

a) Seminal vesicles

b) Ductus deferentia

c) Bladder

d) Prostate gland

4. What is the length of the anal canal?

a) 3-4 cm

b) 8-10 cm

c) 12 cm

d) 20 cm

5. Which of the following structures is NOT involved in maintaining anal continence?

a) Internal anal sphincter

b) External anal sphincter

c) Puborectalis muscle

d) Psoas major muscle

6. What is the name of the longitudinal ridges found in the upper anal canal?

a) Anal valves

b) Anal columns

c) Anal cushions

d) Pectinate line

7. Which of the following statements is TRUE regarding haemorrhoids?

a) They are caused by a deficiency of anal cushions.

b) They are best assessed with a sigmoidoscope.

c) They are a common cause of anal fissures.

d) They result from congestion of the anal cushions.

8. What is the name of the space between the anal canal and the ischiorectal fossa?

a) Perineal body

b) Anococcygeal body

c) Levator ani

d) Ischioanal fossa

9. Which of the following statements is TRUE regarding anal fistulae?

a) They are always caused by trauma.

b) They are usually treated with antibiotics.

c) They result from the rupture of perianal abscesses.

d) They are a common cause of anal incontinence.

10. Where do the lymphatics of the upper anal canal drain?

a) Superficial inguinal nodes

b) Inferior mesenteric nodes

c) Para-aortic nodes

d) Internal iliac nodes

11. Which of the following nerves is responsible for voluntary control of the external anal sphincter?

a) Superior rectal nerve

b) Inferior rectal nerve

c) Pudendal nerve

d) Pelvic splanchnic nerve

12. Which of the following statements is TRUE regarding defecation?

a) It is initiated by relaxation of the internal anal sphincter.

b) It is primarily controlled by the external anal sphincter.

c) It is facilitated by contraction of the diaphragm and abdominal muscles.

d) It is always accompanied by a conscious urge to defecate.

13. What is the normal anorectal angle?

a) 30-40 degrees

b) 60-70 degrees

c) 90 degrees

d) 120-130 degrees

14. Which of the following structures is NOT palpable on digital rectal examination in males?

a) Prostate gland

b) Ductus deferentia

c) Seminal vesicles

d) Uterus

15. What is the name of the procedure used to inspect the bladder and obtain biopsies?

a) Cystoscopy

b) Proctoscopy

c) Sigmoidoscopy

d) Colonoscopy

16. Which of the following statements is TRUE regarding the bladder?

a) It is lined with squamous epithelium.

b) It is located intraperitoneally.

c) It has a fixed size and shape.

d) It is surrounded by smooth muscle.

17. What is the name of the remnant of the urachus that extends from the bladder apex to the umbilicus?

a) Median umbilical ligament

b) Lateral umbilical ligament

c) Ureteral ligament

d) Pubovesical ligament

18. Which of the following statements is TRUE regarding the trigone of the bladder?

a) It is located on the superior surface of the bladder.

b) It is a smooth, triangular area.

c) It is the site of the internal urethral orifice.

d) It is covered by peritoneum.

19. Which of the following nerves is responsible for motor innervation of the bladder wall?

a) Sympathetic nerves

b) Parasympathetic nerves

c) Somatic nerves

d) Sensory nerves

20. What is the typical bladder volume that usually provokes the desire to micturate in adults?

a) 100 mL

b) 200 mL

c) 300 mL

d) 400 mL

Answers:

1. d) Internal iliac artery
2. b) Rectouterine pouch (pouch of Douglas)
3. d) Prostate gland
4. a) 3-4 cm
5. d) Psoas major muscle
6. b) Anal columns
7. d) They result from congestion of the anal cushions.
8. c) Levator ani
9. c) They result from the rupture of perianal abscesses.
10. b) Inferior mesenteric nodes
11. b) Inferior rectal nerve
12. c) It is facilitated by contraction of the diaphragm and abdominal muscles.
13. c) 90 degrees
14. d) Uterus
15. a) Cystoscopy
16. d) It is surrounded by smooth muscle.
17. a) Median umbilical ligament
18. c) It is the site of the internal urethral orifice.
19. b) Parasympathetic nerves
20. c) 300 mL

Lec3: Female Internal Genital Organs

Instructions: Choose the best answer for each question.

1. Which of the following structures is NOT contained within the broad ligament of the uterus?

a) Uterine tubes

b) Ovarian vessels

c) Round ligament of the uterus

d) Ureter

2. What is the name of the peritoneal fold that attaches the ovary to the posterior surface of the broad ligament?

a) Mesosalpinx

b) Mesovarium

c) Mesometrium

d) Suspensory ligament of the ovary

3. Which of the following statements is TRUE regarding the uterus?

a) It is located anterior to the bladder.

b) It is a pear-shaped, hollow, muscular organ.

c) It is typically directed backward at a right angle to the vagina.

d) It is covered by peritoneum on all its surfaces.

4. What is the name of the opening of the cervical canal on the apex of the cervix?

a) External os

b) Internal os

c) Fornix

d) Fundus

5. Which of the following statements is TRUE regarding an intrauterine contraceptive device (IUCD)?

a) It is typically made of metal.

b) It is placed in the cervical canal.

c) It prevents ovulation.

d) It reduces the chance of conception.

6. What is the name of the procedure used to obtain scrapings of the uterine mucosa for microscopic study?

a) Pap smear

b) Colposcopy

c) Dilation and curettage (D&C)

d) Hysterosalpingography

7. Which of the following ligaments is NOT a thickening of the parametrium?

a) Uterosacral ligament

b) Lateral cervical (cardinal) ligament

c) Pubocervical ligament

d) Round ligament

8. Which of the following structures is primarily responsible for supporting the uterus?

a) Round ligaments

b) Broad ligaments

c) Levator ani

d) Uterosacral ligaments

9. What is the name of the condition that occurs when the bladder bulges into the anterior vaginal wall due to weakened pelvic floor muscles?

a) Rectocoele

b) Cystocoele

c) Uterine prolapse

d) Stress incontinence

10. Which of the following statements is TRUE regarding the close relationship between the ureter and the cervix?

a) It makes the ureter vulnerable to injury during hysterectomy.

b) It prevents the ureter from being obstructed in cervical cancer.

c) It is responsible for the frequent occurrence of urinary tract infections.

d) It is the reason for the common occurrence of uterine prolapse.

11. Which of the following statements is TRUE regarding the blood supply to the uterus?

a) It is primarily supplied by the ovarian artery.

b) It is drained by the internal iliac vein.

c) It is supplied by the uterine artery, a branch of the internal iliac artery.

d) It is drained by the inferior vena cava.

12. Where do the lymphatics of the uterus primarily drain?

a) Superficial inguinal nodes

b) Para-aortic nodes

c) Internal iliac nodes

d) External and common iliac nodes

13. Which of the following statements is TRUE regarding the uterine tubes?

a) They are about 5 cm long.

b) They open into the uterus at its lateral angle.

c) They are responsible for transporting ova to the ovary.

d) They are lined with ciliated epithelium.

14. What is the name of the funnel-shaped opening of the uterine tube into the peritoneal cavity?

a) Ampulla

b) Isthmus

c) Infundibulum

d) Fimbriae

15. What is the name of the condition that occurs when a pregnancy develops outside the uterine cavity?

a) Salpingitis

b) Ectopic pregnancy

c) Uterine prolapse

d) Hysterosalpingography

16. Which of the following statements is TRUE regarding the ovary?

a) It is a round, smooth organ.

b) It is attached to the broad ligament by the mesosalpinx.

c) It is responsible for producing estrogen and progesterone.

d) It is located in the ovarian fossa, bounded by the internal iliac vein anteriorly.

17. What is the name of the pain referred to the para-umbilical region that some women experience during ovulation?

a) Mittelschmerz

b) Dysmenorrhea

c) Endometriosis

d) Ovarian cyst

18. Which of the following statements is TRUE regarding the blood supply to the ovary?

a) It is supplied by the uterine artery.

b) It is drained by the internal iliac vein.

c) It is supplied by the ovarian artery, a branch of the aorta.

d) It is drained by the inferior vena cava on both sides.

19. Where do the lymphatics of the ovary primarily drain?

a) Para-aortic nodes

b) Iliac nodes

c) Superficial inguinal nodes

d) Internal iliac nodes

20. Which of the following statements is TRUE regarding the nerve supply to the ovary?

a) It is supplied by the pelvic plexus.

b) It is supplied by the sympathetic nerves from the 10th thoracic segment.

c) It is supplied by the parasympathetic nerves from the sacral plexus.

d) It is supplied by the pudendal nerve.

Answers:

1. d) Ureter
2. b) Mesovarium
3. b) It is a pear-shaped, hollow, muscular organ.
4. a) External os
5. d) It reduces the chance of conception.
6. c) Dilation and curettage (D&C)
7. d) Round ligament
8. c) Levator ani
9. b) Cystocoele
10. a) It makes the ureter vulnerable to injury during hysterectomy.
11. c) It is supplied by the uterine artery, a branch of the internal iliac artery.
12. d) External and common iliac nodes
13. d) They are lined with ciliated epithelium.
14. c) Infundibulum
15. b) Ectopic pregnancy
16. c) It is responsible for producing estrogen and progesterone.
17. a) Mittelschmerz
18. c) It is supplied by the ovarian artery, a branch of the aorta.
19. a) Para-aortic nodes
20. b) It is supplied by the sympathetic nerves from the 10th thoracic segment.

Lec4: Male Internal Genital Organs

Instructions: Choose the best answer for each question.

1. Which of the following structures is NOT part of the prostate gland?

a) Median lobe

b) Lateral lobes

c) Seminal vesicles

d) Ejaculatory ducts

2. What is the name of the fascia that surrounds the prostate and its venous plexus?

a) Rectovesical fascia

b) Prostatic sheath

c) Perineal fascia

d) Deep fascia

3. Which of the following structures is located superior to the prostate?

a) Urethral sphincter

b) Bladder neck

c) Levator ani

d) Seminal vesicles

4. Which of the following arteries supplies the prostate?

a) Superior vesical artery

b) Inferior vesical artery

c) Middle rectal artery

d) Both b and c

5. Where do the lymphatics of the prostate primarily drain?

a) Superficial inguinal nodes

b) Para-aortic nodes

c) Internal iliac nodes

d) External iliac nodes

6. What is the name of the condition that occurs when the prostate gland enlarges, obstructing the flow of urine?

a) Prostatitis

b) Benign prostatic hyperplasia (BPH)

c) Prostate cancer

d) Vasectomy

7. Which of the following procedures is commonly used to treat benign prostatic hyperplasia?

a) Transurethral resection of the prostate (TURP)

b) Prostate biopsy

c) Vasectomy

d) Radical prostatectomy

8. What is the name of the condition that occurs when the prostate gland becomes infected?

a) Prostatitis

b) Benign prostatic hyperplasia (BPH)

c) Prostate cancer

d) Epididymitis

9. What is the name of the muscular tube that carries sperm from the epididymis to the ejaculatory duct?

a) Vas deferens

b) Seminal vesicle

c) Ejaculatory duct

d) Urethra

10. Where is the vas deferens palpable?

a) In the inguinal canal

b) In the scrotum

c) In the pelvis

d) Both b and c

11. Which of the following structures is located lateral to the inferior epigastric vessels in the pelvis?

a) Vas deferens

b) Ureter

c) Seminal vesicle

d) Internal iliac artery

12. What is the name of the dilated portion of the vas deferens near the seminal vesicle?

a) Ampulla

b) Isthmus

c) Infundibulum

d) Epididymis

13. What is the name of the coiled, sacculated diverticulum of the vas deferens that produces a fluid that contributes to semen?

a) Vas deferens

b) Seminal vesicle

c) Ejaculatory duct

d) Prostate

14. What is the name of the pouch of peritoneum that separates the seminal vesicles from the rectum?

a) Rectovesical fascia

b) Rectovesical pouch

c) Perineal fascia

d) Prostatic sheath

15. What is the name of the procedure that involves surgically cutting and tying the vas deferens for male sterilization?

a) Vasectomy

b) TURP

c) Radical prostatectomy

d) Prostate biopsy

16. What is the name of the duct formed by the union of the seminal vesicle duct and the terminal part of the vas deferens?

a) Vas deferens

b) Seminal vesicle

c) Ejaculatory duct

d) Urethra

17. Where do the common ejaculatory ducts open into the urethra?

a) Prostatic urethra

b) Membranous urethra

c) Penile urethra

d) External urethral orifice

18. What is the name of the posterior swelling in the prostatic urethra where the ejaculatory ducts open?

a) Seminal colliculus

b) Verumontanum

c) Prostate gland

d) Both a and b

19. What is the name of the nerves that stimulate contraction of the muscles in the walls of the vas deferens and seminal vesicles?

a) Nervi erigentes

b) Pudendal nerves

c) Pelvic splanchnic nerves

d) Hypogastric nerves

20. What is the name of the condition that occurs when the nervi erigentes are damaged, resulting in impotence?

a) Prostatitis

b) Benign prostatic hyperplasia (BPH)

c) Erectile dysfunction

d) Vasectomy

Answers:

1. c) Seminal vesicles
2. b) Prostatic sheath
3. b) Bladder neck
4. d) Both b and c
5. c) Internal iliac nodes
6. b) Benign prostatic hyperplasia (BPH)
7. a) Transurethral resection of the prostate (TURP)
8. a) Prostatitis
9. a) Vas deferens
10. d) Both b and c
11. a) Vas deferens
12. a) Ampulla
13. b) Seminal vesicle
14. b) Rectovesical pouch
15. a) Vasectomy
16. c) Ejaculatory duct
17. a) Prostatic urethra
18. d) Both a and b
19. a) Nervi erigentes
20. c) Erectile dysfunction

The perineum

1. Which of the following structures is NOT found in the anal triangle?

a) Anal canal

b) Ischioanal fossa

c) Bulbospongiosus muscle

d) Anococcygeal body

2. The ischioanal fossa is bounded superomedially by:

a) Gluteus maximus

b) Obturator internus

c) Levator ani

d) Perineal membrane

3. What is the clinical significance of the ischioanal fossa?

a) It houses the pudendal nerve and vessels.

b) It is the site of the external anal sphincter.

c) It is the primary site of lymphatic drainage for the perineum.

d) It is the site of the deep perineal pouch.

4. What is the most common cause of a fistula in ano?

a) Trauma to the anal canal

b) Infection of the anal glands

c) Congenital malformation

d) Chronic constipation

5. The urogenital diaphragm is a double layer of fascia that stretches across:

a) The pelvic inlet

b) The pelvic outlet

c) The ischial tuberosities

d) The sacrotuberous ligaments

6. Which of the following structures is NOT pierced by the urogenital diaphragm?

a) Urethra

b) Vagina

c) Anal canal

d) None of the above

7. The superficial perineal pouch in the male contains:

a) The prostate gland

b) The membranous urethra

c) The bulbospongiosus muscle

d) The sphincter urethrae muscle

8. The corpus spongiosum of the penis contains:

a) The corpora cavernosa

b) The urethra

c) The suspensory ligament

d) The deep artery of the penis

9. Which artery supplies the corpora cavernosa of the penis?

a) Artery to the bulb

b) Deep artery of the penis

c) Dorsal artery of the penis

d) Inferior rectal artery

10. Erection of the penis is primarily mediated by:

a) Sympathetic nervous system

b) Parasympathetic nervous system

c) Somatic nervous system

d) All of the above

11. What is the clinical significance of the frenular artery during circumcision?

a) It is the primary blood supply to the glans penis.

b) It is easily damaged and can lead to significant bleeding.

c) It is the site of the dorsal nerve of the penis.

d) It is the only artery supplying the prepuce.

12. The scrotum is a pouch of skin that contains:

a) The testes and spermatic cords

b) The prostate gland

c) The seminal vesicles

d) The bulbourethral glands

13. The deep perineal pouch in the male contains:

a) The bulbospongiosus muscle

b) The membranous urethra

c) The superficial transverse perineal muscle

d) The ischiocavernosus muscle

14. The prostatic urethra is the widest part of the male urethra and is characterized by:

a) The presence of the sphincter urethrae muscle

b) The opening of the ejaculatory ducts

c) The presence of the bulb of the urethra

d) The presence of the external urethral meatus

15. What is the clinical significance of the membranous urethra?

a) It is the site of the prostatic utricle.

b) It is the narrowest part of the urethra and is vulnerable to injury during catheterization.

c) It is the longest part of the urethra.

d) It is the only part of the urethra that is not surrounded by erectile tissue.

16. The female superficial perineal pouch contains:

a) The sphincter urethrae muscle

b) The deep perineal muscles

c) The crura of the clitoris

d) The prostatic urethra

17. What is the clinical significance of the greater vestibular glands?

a) They are responsible for lubrication of the vagina.

b) They are the site of the external urethral meatus.

c) They are the site of the hymen.

d) They are the primary site of lymphatic drainage for the female genitalia.

18. An episiotomy is a surgical incision made during childbirth to:

a) Prevent tearing of the anal sphincter

b) Facilitate delivery of the baby

c) Reduce the risk of postpartum hemorrhage

d) All of the above

19. The female external genitalia includes:

a) The mons pubis, labia majora, labia minora, clitoris, and vestibule

b) The vagina, cervix, and uterus

c) The ovaries and fallopian tubes

d) The bladder and urethra

20. The vagina is a canal that extends from:

a) The bladder to the anus

b) The uterus to the pudendal cleft

c) The clitoris to the urethra

d) The labia majora to the labia minora

Answers:

1. c) Bulbospongiosus muscle
2. c) Levator ani
3. a) It houses the pudendal nerve and vessels.
4. b) Infection of the anal glands
5. b) The pelvic outlet
6. c) Anal canal
7. c) The bulbospongiosus muscle
8. b) The urethra
9. b) Deep artery of the penis
10. b) Parasympathetic nervous system
11. b) It is easily damaged and can lead to significant bleeding.
12. a) The testes and spermatic cords
13. b) The membranous urethra
14. b) The opening of the ejaculatory ducts
15. b) It is the narrowest part of the urethra and is vulnerable to injury during catheterization.
16. c) The crura of the clitoris
17. a) They are responsible for lubrication of the vagina.
18. d) All of the above
19. a) The mons pubis, labia majora, labia minora, clitoris, and vestibule
20. b) The uterus to the pudendal cleft

Blood and nerve supply of pelvis and perineum

Instructions: Choose the best answer for each question.

1. Which artery is the main source of blood supply to the pelvic floor and perineum?

a) Femoral artery

b) Internal iliac artery

c) External iliac artery

d) Common iliac artery

2. The internal iliac artery divides into parietal and visceral branches. Which of the following is a parietal branch?

a) Uterine artery

b) Superior vesical artery

c) Obturator artery

d) Middle rectal artery

3. Which artery supplies the gluteal muscles and hip joint, exiting the pelvis via the greater sciatic notch above the piriformis?

a) Inferior gluteal artery

b) Internal pudendal artery

c) Superior gluteal artery

d) Lateral sacral artery

4. The inferior epigastric artery is a branch of the external iliac artery. What does it supply?

a) The pelvic viscera

b) The lower limb

c) The posterior abdominal wall muscles

d) The anterior abdominal wall muscles

5. Which artery supplies the bladder, prostate, and lower rectum?

a) Uterine artery

b) Superior vesical artery

c) Middle rectal artery

d) Vaginal artery

6. The obturator artery supplies the hip joint. In what age groups is this particularly important?

a) Only in newborns

b) Only in adolescents

c) Both children and adults

d) Only in the elderly

7. What is the name of the obliterated umbilical artery that forms a fibrous cord between the pelvic wall and umbilicus?

a) Medial umbilical ligament

b) Lateral umbilical ligament

c) Round ligament

d) Urachus

8. Which vein drains the pelvic viscera and communicates with the vertebral venous plexuses?

a) External iliac vein

b) Internal iliac vein

c) Common iliac vein

d) Inferior vena cava

9. The ovaries and testes drain via gonadal veins. Where does the left gonadal vein drain into?

a) Inferior vena cava

b) Right renal vein

c) Left renal vein

d) Common iliac vein

10. What is the significance of the communication between pelvic venous plexuses and vertebral venous plexuses?

a) It explains the frequent spread of pelvic cancers to the lower limbs.

b) It explains the frequent spread of pelvic cancers to the vertebrae and skull.

c) It explains the frequent spread of pelvic cancers to the abdominal wall.

d) It explains the frequent spread of pelvic cancers to the lungs.

11. Which lymph nodes drain all of the pelvic viscera except the ovaries and testes?

a) External iliac nodes

b) Internal iliac nodes

c) Para-aortic nodes

d) Superficial inguinal nodes

12. Where do lymph vessels from the anterior abdominal wall drain to?

a) Axillary nodes, anterior mediastinal nodes, and superficial inguinal nodes

b) Para-aortic nodes and common iliac nodes

c) Internal iliac nodes and superficial inguinal nodes

d) Coeliac nodes and superior mesenteric nodes

13. Which lymph nodes drain the kidneys, suprarenals, and gonads?

a) Coeliac nodes

b) Superior mesenteric nodes

c) Para-aortic nodes

d) Internal iliac nodes

14. What is the name of the sac that receives the right and left lumbar lymph trunks and the intestinal lymph trunk?

a) Cisterna chyli

b) Thoracic duct

c) Lymphatic duct

d) Subclavian vein

15. Where do efferent vessels from the iliac nodes pass to?

a) Superficial inguinal nodes

b) Para-aortic nodes

c) Coeliac nodes

d) Superior mesenteric nodes

16. The lumbar plexus is formed from the ventral primary rami of which spinal nerves?

a) T12-L1

b) L1-L4

c) L4-S1

d) S1-S4

17. Which nerve supplies the quadriceps, sartorius, and pectineus muscles?

a) Obturator nerve

b) Femoral nerve

c) Sciatic nerve

d) Pudendal nerve

18. The sacral plexus is formed from the ventral primary rami of which spinal nerves?

a) L4-L5 and S1-S4

b) L1-L4 and S1-S4

c) T12-L1 and S1-S4

d) L4-L5 and S2-S4

19. Which nerve supplies the external anal sphincter, superficial muscles of the perineum, and the penis (clitoris)?

a) Femoral nerve

b) Obturator nerve

c) Sciatic nerve

d) Pudendal nerve

20. Lumbar sympathectomy is sometimes used to treat hyperhidrosis. What is its effect on the body?

a) It increases blood flow to the lower limbs.

b) It reduces sweating in the lower limbs.

c) It increases sweating in the lower limbs.

d) It reduces blood flow to the lower limbs.

Answer Key:

1. b) Internal iliac artery
2. c) Obturator artery
3. c) Superior gluteal artery
4. d) The anterior abdominal wall muscles
5. c) Middle rectal artery
6. c) Both children and adults
7. a) Medial umbilical ligament
8. b) Internal iliac vein
9. c) Left renal vein
10. b) It explains the frequent spread of pelvic cancers to the vertebrae and skull.
11. b) Internal iliac nodes
12. a) Axillary nodes, anterior mediastinal nodes, and superficial inguinal nodes
13. c) Para-aortic nodes
14. a) Cisterna chyli
15. b) Para-aortic nodes
16. b) L1-L4
17. b) Femoral nerve
18. a) L4-L5 and S1-S4
19. d) Pudendal nerve
20. b) It reduces sweating in the lower limbs.